SCREENING FOR ANTISOCIAL DEVELOPMENT

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by

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ABSTRACT

Teachers report that there are an increased number of students engaging in persistent antisocial behaviour in their classrooms. Teachers need to identify these students early because if there is early identification then there is the potential for early intervention, which in turn may prevent negative long-term outcomes for these students as well as long-term costs to society. The aims of this study were (1) develop a psychometrically sound, cost effective, three-step multiple gating behaviour screening procedure that teachers could use in their kindergarten/classroom so that they could identify those students at-risk of antisocial development, (2) examine if the third gate of this procedure was necessary for the accurate identification of these students, and (3) could such a screening procedure be adapted for classroom teacher use in New Zealand kindergartens and schools. Forty eight teachers from three kindergartens and 10 primary/intermediate schools volunteered for the study, of which 34 teachers completed all three gates of the screening procedure. Results indicate the three gate screening procedure was easily adapted for kindergarten and classroom use with, at Gate 3, teachers' self-recording 30 direct observations of a nominated and control student during their normal teaching lesson with good accuracy. All three gates were effective in identifying those students at-risk of antisocial development but Gates 1 and 2 were the most effective in terms of accuracy, time and resourcing. The teachers found the three gate procedure manageable, required very little training and did not interrupt classroom routine or schedules. The implications of these findings are discussed.

GLOSSARY

ABA	Applied behaviour analysis
ABC observation	Antecedent, Behaviour, Consequence observation recording form
ABS	Adaptive Behavior Rating Scale
Acad.	Academic
AE	Academic engagement
AET	Academic engaged time
AGCP	Advisory Group on Conduct Problems
Agress. BS	Aggressive Behavior Scale
ASEBA	Achenbach System of Empirically Based Assessment
ASEBA-TRF	Achenbach System of Empirically Based Assessment-Teacher Report Form
ASEBA-YRF	Achenbach System of Empirically Based Assessment-Youth Report Form
AUC	Area under the curve
BASC-2	Behavior Assessment System for Children (2nd ed.)
Basic FBA	Basic Function-Based Assessment to Behaviour Support Plans: Trainer's Manual
BCBA	Board Certified Behavior Analyst
Beh.	Behaviour
BERS	Behavior and Emotional Rating Scale
BESS	Behavioral and Emotional Screening System
BPBQ	Behar Preschool Behavior Questionnaire
CBCL	Child Behavior Checklist List
CBCL-TRF	Child Behavior Checklist–Teacher Report Form
CBI-T	Classroom Behavior Inventory-Teachers
CBM	Curriculum-based measurement
CEI	Critical Events Index
CFI	Combined Frequency Index
CI3T	Integrated, Three-Tier (CI3T) model
CLP	Child-Led Play
CSDS	Canterbury Social Development Scale
CTCS	Classroom/Teacher Characteristic Survey
CTRS	Conner Teacher Rating Scale
CTRS-R	Conner Teacher Rating Scale-Revised
CU	Clean-Up
CV	Concurrent validity
DB	Disruptive behaviour
DBR-SIS	Direct Behavior Rating - Single Item Scale
DIBELS	Dynamic Indicators of Basic Literacy Skills

DPICS	Dyadic Parent-Child Interaction Coding System
DSM-V and IV	Diagnostic and Statistical Manual for Mental Disorders (5^{th} ed.) and (4^{th} ed.)
DV	Discriminant validity
EBD	Emotional and Behavioural Disorders
ECBI	Eyberg Child Behavior Inventory
ESP	The Early Screening Project
FA	Functional assessment
FACTS	Functional Assessment Checklist for Teachers and Staff
FAHFP	Functional Assessment Hypotheses Formulation Protocol
FB	Function-based
FBA	Functional behavioural assessment
GPA	Grade point average
IOA	Inter-observer agreement
MBS	Maladaptive Behavior Rating Scale
MoE	Ministry of Education
MOOSES	Multiple Option Observations System for Experimental Studies
NPV	Negative predictive value
NSI	Negative social interaction
ODD	Oppositional Defiant Disorder
ORD	Office Referral Discipline
OSLC	Oregon Social Learning Centre
PB4L	Positive Behaviour for Learning Action Plan
PBQ	(Behar) Preschool Behavior Questionnaire
PCIT	Parent-Child Interaction Therapy
PLP	Parent-Led Play
PMTO	Parent Management Training-Oregon
PPV	Positive predictive value
PRS	Parent Rating Scale
PSB	Peer Social Behavior
PSBP	Preschool Screening for Behavior Problems
PSI	Positive Social Interaction
RB	Respectful behaviour
REDSOCS	Revised Edition of the School Observation Coding System
ROC	Receiver-Operating Characteristic
RTI	Response to Intervention Model
RTLB	Resource Teachers: Learning and Behaviour
SAET	Structured Activity Engaged Time
SARS	School Archival Record Search
SBO	Social Behaviour Observation
SES	Student Enrolment Survey

SDQ	Strengths and Difficulties Questionnaire
SESBI	Sutter-Eyberg Student Behavior Inventory
SIS	Social Interaction Scale
SRS	Student Record Survey
SRSS	Student Risk Screening Scale
SRSS-IE	Student Risk Screening Scale - Internalising
SSBD	Systematic Screening for Behavior Disorders
SSiS-RS	Social Skills Improvement System - Revised
SSRS -T & P	Social Skills Rating System-Teachers & Parent
T-Cap	Achievement test in reading, language arts, mathematics, science and social studies
TOPA	Test of Phonological Awareness
TRF	Teacher Report Form
TRS	Teacher Rating Scale
YSR	Youth Self Report
WJ-III	Woodcock Johnston III Tests of Achievement
WRMT-R	Woodcock Ready Mastery Test –Revised

CHAPTER 1: INTRODUCTION

1.0 Chapter Overview

In New Zealand, behaviour screening for students at-risk of antisocial development is *ad hoc* because there is no universal screening procedure. A *wait to fail* model (Gresham, 2007a) currently operates in kindergartens and schools. This chapter provides an overview of antisocial development, its prevalence and the long-term prognosis for children who follow this pathway. To halt this pathway, early intervention is required but even before this accurate identification of early onset antisocial development is needed. In order for teachers to detect early onset antisocial development in their students, they require a psychometrically sound behaviour screening procedure and the necessary training to undertake this screening. A number of screening procedures applicable to the classroom setting and the fit of these screening procedures to the school environment are described.

1.1 Introduction

There have always been a small proportion of children who manifest persistent antisocial behaviour. For example, some children bully, hit, swear, throw tantrums and refuse to comply with adult instructions. These children tend to alienate themselves from their peers and adults, disrupt people in their work, and become the centre of escalating conflict within the school and family (Patterson, 1982; Walker & Sprague, 1999). Persistent antisocial behaviour is becoming recognised as a serious impediment to the social and emotional development of young children and also as an indicator of future problems both in school and later adult life (Advisory Group on

Conduct Problems, 2009; Dunlap et al., 2006; Patterson, DeBaryshe & Ramsey, 1989; Walker & Sprague, 1999).

Research into the development of antisocial behaviour is extensive. A detailed analysis of the origins of antisocial behaviour and its developmental course has been provided by the Oregon Social Learning Centre (OSLC). Their research covers 40 years and has produced over 600 papers and books on the development of antisocial behaviour in young children and youth. They have tested and refined a general model of antisocial development using observational data, longitudinal studies, correlational analyses and intervention studies (Patterson, 2002; Reid, Patterson, & Snyder, 2002).

In schools, many children who are at risk of future behaviour and learning difficulties fall through the cracks (Barnes & Harlacher, 2008; Dowdy, Doane, Eklund, & Dever, 2011), are not provided with services until they experience failure (DiPerna, Bailey, & Anthony, 2014; Glover & Albers, 2007; Gresham, 2007a; Wagner, Kutash, Duchnowski, Epstein, & Sumi, 2005), or are never identified for services by schools (Kamphaus, DiStefeno, Dowdy, Eklund, & Dunn, 2010). As a consequence these students not only learn more sophisticated forms of antisocial behaviour but the intensity, frequency and complexity of these behaviours increase with age (Patterson & Yoerger, 2002; Walker, Ramsey, & Gresham, 2004). In response to these concerns, the New Zealand Government launched an interagency approach to address conduct disorder/severe antisocial behaviour. Organisations involved include the New Zealand Ministries of Education, Social Development, Health, and Justice (Ministry of Social Development, 2007) and in 2010, the Ministry of Education launched a Positive Behaviour for Learning Action Plan (PB4L) (Ministry of Education, 2010). The PB4L plan contains a number of initiatives that sit comfortably within the Response to Intervention (RTI) model (Fuchs & Fuchs, 2006; Sugai &

Horner, 2009) and the Comprehensive Integrated, Three-Tier (CI3T) model recently developed by Lane and colleagues (Lane, Oakes, Jenkins, Menzies, & Kalberg, 2014). These models identify three tiers of response intensity and are based on systematic, data-based decision making practices.

While the PB4L plan sits comfortably with the RTI and the CI3T models it does not include a standardised screening system designed to identify children at-risk of antisocial development at the first tier.

1.2 Definition of Conduct Disorder/Antisocial Development

Most children engage in antisocial behaviour at some point in their development. These behaviours include breaking rules, not conforming to accepted standards, being hostile or aggressive towards others, defying adult authority and so on. These are behaviours which are viewed as "hostile to the well-being of society and aversive to others" (Walker et al., 2004, p. 4).

Over the past 40 years, children who engage in elevated rates of antisocial behaviour have been referred to using a number of different labels such as *emotionally disturbed, behaviour disordered, conduct disordered, socially maladjusted, disruptive, under-socialised, children with behaviour difficulties*, and so on (Church, 2003; Dadds, 1997; McMahon, Wells, & Kotler, 2006). In more recent times the term *antisocial* has become more common (e.g. Church, 2003; Ministry of Education, 2011; Ministry of Social Development, 2007; Walker, Small, Severson, Seeley, & Feil, 2014; Walker et al., 2004).

1.2.1 Psychiatric Definitions. Psychiatric definitions have evolved over the last 40 years. Disruptive, impulse control, and conduct disorders all include problems with self-control of

emotional and behavioural regulation. The basic premise of these definitions is that they can be grouped into eight main classes of which oppositional defiant disorder, intermittent explosive disorder and conduct disorder appear to be the most prevalent. Each of these disorders has its own symptom list.

Oppositional defiant disorder (ODD) is defined as "a pattern of angry/irritable mood, argumentative/defiant behavior, or vindictiveness lasting at least 6 months" (American Psychiatric Association, 2013, p.462). The symptom list includes such behaviours as loses temper, is touchy or easily annoyed, exhibits anger and resentment, argues with authority figures, actively defies or refuses to comply with requests from authority figures, or rules, deliberately annoys others, blames others for their mistakes or misbehaviour, or has been spiteful or vindictive. At least four of these behaviours must impact negatively on the child's academic or social functioning for a diagnosis of ODD to be considered.

Intermittent explosive disorder is defined as "recurrent behavioral outbursts representing a failure to control aggressive impulses" (American Psychiatric Association, 2013, p.466). The symptom list includes two main features: (1) such behaviours as verbal aggression or physical aggression towards property, animals, or other individuals occurring twice weekly, on average, for a period of 3 months. The physical aggression does not result in damage or destruction to the property, animals or persons and (2) three behavioural outburst involving damage or destruction of property and/or physical assault involving physical injury against animals or other individuals occurring within a 12-month period and is not premeditated. The magnitude of the event is grossly out of proportion to the provocation or to any precipitating psychosocial stressors.

Conduct disorder is defined as a "repetitive and persistent pattern of behavior in which the basic rights of others or major age-appropriate societal norms or rules are violated" (American

Psychiatric Association, 2013, p. 469). The symptom list includes bullying, fighting, using a weapon, physical cruelty to people and/or animals, stealing with confrontation of the victim, forced sexual activity, fire setting, destruction of property, breaking and entering, lying for personal gain, stealing without confronting the victim, staying out all night before the age of 13 years, running away from home and, truanting from school before 13 years of age. The behaviour must lead to significant impairment in the child's academic or social functioning.

In the Diagnostic and Statistical Manual for Mental Disorders (5th ed.) (DSM-V), *Attention deficit hyperactivity disorder* has been re-classified from a Conduct to a Neurodevelopmental Disorder, but the definition remains very much the same as it was in DSM-IV: "a persistent pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning or development" (American Psychiatric Association, 2013, pg. 59-60). The presence of attention deficit hyperactivity disorder is signalled by the occurrence of behaviours in either of two alternative symptom lists. The first category is *inattention* and includes any six of the following behaviours: lack of attention to detail, difficulty in sustaining attention, seems not to listen, fails to finish tasks, difficulty in organising tasks, avoids or dislikes tasks requiring sustained effort, loses things, is easily distracted or is often forgetful. The second includes any of the six *hyperactivity and impulsivity* characteristics such as, fidgets, leaves seat inappropriately, runs about or climbs excessively, has difficulty playing, is often on the go, talks or blurts out excessively, has difficulty waiting their turn, and interrupts others. These symptoms must have been present before the age of 12 years and lead to interference with, or reduced quality in, the child's academic or social functioning.

The notion of conduct disorder as a list of symptomatic behaviours continues to appear in New Zealand publications. For example, the Advisory Group on Conduct Problems (AGCP, 2009, p.4) define antisocial behaviour in the following terms:

> Childhood conduct problems include a spectrum of antisocial, aggressive, dishonest, delinquent, defiant and disruptive behaviours. These behaviours may vary from none to severe, and may have the following consequences for the child/young person and those around him/her – stress, distress and concern to adults caregivers and authority figures; threats to the physical safety of the young people involved and their peers; disruption of home, school or other environments; and involvement of the criminal justice system.

The psychiatric definitions tend to assume that children who engage in elevated levels of antisocial behaviour have an underlying disorder, possibly caused by some kind of neurophysiological dysfunction, which is characteristic of the child and which lies within the child rather than within the environment in which they live (Sonuga-Barke, 1998). This view tends to direct attention away from the question of why some children continue to engage in antisocial behaviour while others learn not to.

1.2.2 Changing Educational Definitions. In 1975, Simcha-Fagan, Langner, Gersten and Eisenberg defined antisocial behaviour as "recurrent violations of socially prescribed patterns of behaviour" (p. 7).

More recently, educational writers are beginning to take the view that children who engage elevated levels of antisocial behaviour do not have a disorder but rather are children who respond with antisocial behaviour to certain kinds of social events in their environment possibly because they have yet to learn and internalise as appropriate, prosocial responses. McMahon et al. (2006) and Walker et al. (2004) suggest that the child's antisocial behaviour

(like their social behaviour) is influenced by such things as the child's culture, earlier learning experiences, family functioning, peer influences and other social factors. The most recent educational approaches try to take into account not only the *context* in which the behaviour is occurring but also the *function or purpose* which the behaviour serves for the child (Cipani & Schook, 2011; Loman & Horner, 2014; Steege & Watson, 2009; Umbreit, Ferro, Liaupsin, & Lane, 2007). For example, one child may kick and swear to get a parent's attention but another child may kick and swear to avoid or escape a task they dislike. Like appropriate behaviour, persistent antisocial behaviour may pay off/be reinforced many times in a single day.

This change in thinking is evident within the New Zealand Ministry of Education's PB4L Action Plan. Central to this plan is a change from viewing the child as a problem to one of actively teaching positive social skills while at the same time removing any reinforcing outcomes which are resulting from the antisocial behaviour (Ministry of Education, 2010; 2011).

1.3 Prevalence of Elevated Rates of Antisocial Behaviour

Elevated rates of antisocial behaviour are the most frequently reported of all the child behaviour problems (McMahon et al., 2006; Walker et al., 2004). Measuring the prevalence of persistent antisocial behaviour in children and youth is problematic for a number of reasons. First, the rates may differ depending on the definition used. If the definition is more flexible or open then more children are identified than when the definition is more restricted. Second, prevalence depends upon where cut-off scores on the rating scale are set with respect to behavioural frequency at each age level. Third, larger samples provide a more accurate estimate of persistent antisocial behaviour than smaller samples (Church, 2003). Finally, the estimates depend upon the informant – whether self-reported, teacher reported or parent reported

(McMahon et al., 2006). Additionally, there is also a high correlation between the prevalence of persistent antisocial behaviour and ethnicity in New Zealand (Ministry of Education, 2013).

Surveys in the United States of America indicate that between 2% and 6% children and youth engage in some form of persistent antisocial behaviour (Dadds, 1997; Frick, 2006). In their analysis of 20 population based studies, McMahon et al. (2006) reported a prevalence of 5% to 10% of children diagnosed as having conduct disorder or ODD between the ages of 8-16 years. Kazdin (1993) and Kauffman and Brigham (2009) report a similar finding of 2% to 6% with conduct disorder in the general population. Similarly, Frick (2006) reports that between 3% to 5% of pre-adolescent boys and 6% to 8% of adolescent boys met the criteria for conduct disorder/antisocial behaviour, with boys outnumbering girls by 4:1.

There are three New Zealand prevalence studies, all of which used the same procedures. The Canterbury Survey (Church, 1996) involved 189 Canterbury primary schools and then shortly after this in 1997, and again in 2000, Bretherton replicated the Canterbury survey in 85 schools in Otago. All students from Year 1 (age 5), Year 4 (age 8) and Year 7 (age 11) were sampled, using a nomination form and then the Canterbury Social Development Rating Scale. The results indicated that approximately 5% of the students in these specific Year groups engaged in elevated levels of antisocial behaviour at school. The Year 1 figures for the three surveys (Canterbury, 1996, Otago, 1997 and Otago, 2000) were 2.84%, 4.53% and 2.7% respectively. The Year 4 student figures were 4.43%, 7.53% and 6.0% and the Year 7 figures were 4.47%, 4.50% and 5.7% with a mean of 4.9%. In the Canterbury survey, 85% of the identified Year 4 and Year 7 students who engaged in antisocial behaviour were boys and 15% were girls. Similar results were found in both Otago surveys. In the Canterbury survey, the decile 1 and 2 schools contained six times as many children with persistent antisocial behaviour

than the decile 9 and 10 schools. In both Otago surveys, the percentage of children engaging in persistent antisocial behaviour in decile 1 and 2 schools was three times greater than it was in decile 9 and 10 schools.

From the Christchurch Health and Development Study, Fergusson and Horwood (2002) found from their cohort of 1,265 children, 9.4% of males and 2.1% of females engaged in high levels of antisocial behaviour throughout their childhood and youth. This figure is similar to that of Moffit, Caspi, Harrington and Milne (2002) from the Dunedin Multidisciplinary Health and Development Study where they found from a cohort of 477, 26 year old males, 10% engaged in extreme levels of antisocial behaviour during their childhood and youth.

In New Zealand schools, the pattern of student stand downs, suspensions, exclusions and expulsion is also concerning. From a total of 759,960 primary and secondary students, the Ministry of Education (2014) report that during 2012 there were 16,712 stand-downs involving 13,040 students. This equates to 1.8% of the total student population. Physical assault (26%), continual disobedience (23%) or verbal abuse of staff (14%) accounted for two-thirds of the yearly total. With regard to suspensions, there were 3,357 suspensions involving 3,061 students which equates to 0.4% of the total student population. Two thirds of the suspensions were for continual disobedience (25%), drug related reasons (24%) or physical assault on other students (18%). Exclusions made up 0.2% of the total student population with 1,117 students excluded. The main reasons for exclusions were continual disobedience (34%), physical assaults on other students (17%) and drug related behaviours (15%). Of all the students aged 16 years and over, 137 were expelled from school in 2012. This number equates to 0.1% of the total student population. Drugs (26%), physical assaults (25%) and continual disobedience (11%) were the main reasons for expulsion. The number of Māori students in all four categories was

approximately double that of Pākehā/European New Zealanders. Māori students were also five times more likely to be excluded in lower decile schools than students from higher decile schools. In addition, male students were more likely to receive stand-downs, suspensions, exclusions and expulsions than their female counterparts.

1.4 The Developmental Pathway for Antisocial Behaviour

Patterson and his colleagues argue that the "route to chronic delinquency is marked by a reliable developmental sequence of experiences" (Patterson et al., 1989, p. 329). This is a sequence that starts during early childhood and which leads to problems in academic achievement and rejection by normal peers during middle childhood. This in turn leads to involvement in deviant peer groups and delinquency in late childhood and adolescence.

For the most at-risk children elevated rates of antisocial behaviour begin to appear early in the child's life (at around 3 to 4 years of age) and continue as a life course trajectory (Granic & Patterson, 2006; Patterson, Shaw, Snyder, & Yoerger, 2005; Patterson & Yoerger, 2002). Church (2003) and Walker et al. (2004) suggest that one of the earliest signs that a young child may be entering an antisocial developmental trajectory is the child's failure to acquire age appropriate levels of compliance with adult instruction prior to school entry. Dadds (1997) suggests that by age two or three, non-compliance along with inattentiveness, irritability and impulsivity are strong predictors of future antisocial development.

Patterson, Reid and Dishion (1992) describe an interconnectedness amongst the different forms of antisocial behaviour. For example, children who engage in high rates of noncompliance also tend to engage in high rates of hitting, fighting and stealing. Likewise, those adolescents who engage in high rates of trivial criminal activity (petty theft) also tend to engage in violent

delinquent acts. Patterson concluded that while "each antisocial behaviour may be maintained by its own set of contingencies, there may be some general sense in which they are all part of the same system" (p.134).

Direct observation of antisocial children at home and at school indicates that antisocial behaviour is often functional although the reinforcers that maintain antisocial responses tend to change with age and settings. Antisocial behaviour appears to be shaped and maintained by four main processes, including inadvertent reinforcement of inappropriate behaviour, failure to reinforce appropriate behaviour, reinforcement traps, and the escalation of coercive interactions (Patterson, 1982).

1.4.1 The Reinforcement of Inappropriate Behaviour. During daily interactions, parents may inadvertently reinforce their child's inappropriate behaviour. The first antisocial behaviour exhibited is often failure to comply with simple parental requests. Failure to achieve compliance results in increased confrontations and coercive exchanges between the child and parent. These interactions inadvertently strengthen the child's antisocial behaviour through the process of negative reinforcement. For example, the parent makes a simple request, the child screams, the parent ends the request and the child stops screaming. In this interaction the child's behaviour has been negatively reinforced as he/she does not have to do what was requested by the parent, and also the parent's "giving in" is also negatively reinforced because the child stops screaming. Snyder and Patterson (1995) found that with antisocial children these coercive tactics worked more often than did constructive (prosocial) tactics, whereas, for children who did not engage in persistent antisocial behaviour, constructive tactics were more often effective than coercive tactics.

1.4.2 The Failure to Reinforce Appropriate Behaviour. Parents (and teachers) who spend much of their time engaged in coercive/negative interactions with their child such as sorting out fights and arguing over chores are less likely to respond to their child's positive behaviours when these do occur. The more the child engages in antisocial behaviour the less he/she will be reinforced for engaging in prosocial behaviour (Dadds, 1997). Furthermore, parents who fail to notice, or fail to reinforce prosocial behaviour limit the opportunities for their child to develop prosocial habits.

1.4.3 The Reinforcement Trap. Negative reinforcement increases the likelihood of escape and avoidance when faced with social and academic demands. For example, if the child is given a request from an adult, the child may kick, scream or hit out. When these confrontations occur, the adult feels helpless and has an increased tendency to give in earlier each time to the child's antisocial behaviour, thus coercive patterns of behaviour shape and reinforce and therefore unwittingly teach children aggressive, coercive, and noncompliant behaviour. Both the child and adult become trapped in a cycle of negative reinforcement (Patterson, 2002; Patterson et al., 1989).

1.4.4 The Escalation of Antisocial Behaviour. Antisocial behaviour tends to escalate when previous means of getting one's own way are no longer effective. If a child has previously whinged to get his/her own way and then finds this to be ineffective, they may experiment with more aversive behaviour to get their own way. Children who engage in high rates of noncompliance are also at risk of engaging in higher rates of hitting, fighting and stealing (Patterson, et al., 1992). During arguments, the intensity of the interaction increases with both

the child and the parent using increasingly more aversive tactics each in an attempt to get their own way. In this way, a child's tantrums can escalate into bullying, hitting and even physical attacks. Patterson et al. (1989) suggest that this results in family members inadvertently training their child to engage in antisocial behaviour. Moreover, as the child gets older (and the training continues) the antisocial behaviour escalates to more severe forms such as physical attacks.

These processes have been observed by Eddy, Leve and Fagot (2001) who undertook two studies of two of Patterson's central constructs; "parent inept discipline" and "child antisocial behaviour". The participants were 407, five year old boys and girls from two-parent families. The measures were the Child Behavior Checklist (CBCL) (Achenbach, 1991), parent daily reports and direct observations. Their findings replicated the original 1989 findings of Patterson and his colleagues where they found a similar relationship between inept parental discipline and child antisocial behaviour. They also found that coercion theory applied equally to girls as to boys and that the developmental trajectory began at the same point for girls as it did for boys.

1.5 Prognosis for Children At-Risk of Antisocial Development

Antisocial behaviour in childhood has been shown to be a significant precursor for adverse life events. Numerous studies have shown that children with early onset antisocial development are at-risk of a lifetime of problems including poor health, low educational achievement, and repeated contact with the justice system (Broidy et al. 2003; Fergusson, Boden, & Horwood, 2009; Fergusson & Horwood, 2002; Fergusson, Horwood & Lynsky, 1995; Jakobsen, Fergusson, & Horwood, 2012; Moffitt, et al., 2002; Rutter, Kim-Cohen, & Maughan, 2006).

In school age children and youth, behaviours such as bullying, socially inept attempts to interact/play with peers, defiance, restlessness, antisocial responses to correction, aggressiveness,

short attention span, low rates of task completion, and task avoidance have all been found to predict antisocial development. Broidy et al. (2003), in an analysis of samples from six sites across three countries, found chronic physical aggression in boys during the primary school years greatly increased the risk of physical violence as well as other forms of non-violent offending during adolescence.

It is customary to distinguish between children who engage in persistent antisocial behaviour during the primary school years and those who begin to engage in antisocial acts only when they reach adolescence (Frick, 2006; Moffitt, 1993), but both the Christchurch Health and Development study and the Dunedin Multidisciplinary Health and Development study found that the situation may be more complicated than this.

1.5.1 The Christchurch Health and Development Study. In the Christchurch Health and Development Study, Ferguson and Horwood (2002) identified five developmental trajectories in a sample of 1,265 New Zealand children born in 1977. These were:

Group 1, Low risk group. This group engaged in little, if any, antisocial behaviour at 8, 9, and 10 years of age and engaged in few offences during their teenage years. This trajectory was followed by 41% of boys and 71% of girls.

Group 2, Early onset adolescent limited group. Between the ages of 8 to 12 years, the early onset adolescent limited group engaged in low rates of antisocial behaviour but reported small amounts of offending early in their teenage years (M = 4.8 offences between the ages of 14-20 years). This trajectory was followed by 15% of boys and 21% of girls.

Group 3, Intermediate onset adolescent limited group. The third group, the intermediate onset adolescent limited group, was similar to Group 2 with low rates of antisocial behaviour

occurring when young, but as the children grew older, offending rates increased, peaking at age 17 years (*M* = 49 offences between the ages of 14-20 years with similar rates of offences for boys and girls). This trajectory was followed by 10.3% of boys and 3.7% of girls.

Group 4, Late onset adolescent offenders group. With this group, offending increased rapidly from age 17 years but declined around the age of 20. This group had low rates of offending from middle childhood to 17 years (*M* = 24 self-reported male offences and 34 self-reported female offences between the ages of 14-20 years). This trajectory was followed by 25% of boys and 2.4% of girls.

Group 5, Chronic offenders group. The antisocial behaviour of the chronic offenders group appears to follow a developmental pathway that starts in early childhood and continues into adulthood. These children engaged in high rates of antisocial behaviour throughout their entire childhood and adolescence and their antisocial behaviour began to decline only at age 20. Between the ages of 14 to 20 years, this group self-reported a mean of 141 offences. This trajectory was followed by 9.4% of boys and 2.1% of girls.

1.5.2 Dunedin Multidisciplinary Health and Development Study. In the Dunedin Multidisciplinary Health and Development Study, Moffitt et al. (2002) identified five developmental trajectories in their cohort of 477 males. These were as follows.

Group 1, Unclassified group. These men comprised of 51% of the cohort. They did not engage in crime nor did they have any diagnosable mental health disorders.

Group 2, Abstainer group. These men comprised of 5% of the cohort and were defined as having no more than one antisocial problem at any assessment age from 5 to 18 years of age.

Group 3, Recovery/internalising group. This group made up 8% of the cohort. These men engaged in extreme antisocial behaviours during childhood but during adolescence their behaviour was only moderately antisocial. This group, the "low-level chronic offenders", had difficulty making friends, were often social isolates and none was married. They were less educated, had low-status jobs, many had financial difficulties and expressed the least hope for their future.

Group 4, Life-course-persistent group. This group made up 10% of the cohort and had stable and extreme antisocial behaviour during childhood plus extreme delinquent involvement in adolescence. They were also two to three times more likely than Group 5, the adolescent-limited boys, to be convicted of serious crimes and these males also had serious psychiatric and behavioural problems. In addition, they had poor work histories, low-status/unskilled jobs, criminal records and minimal educational qualifications. They also fathered a large number of children to different mothers and did not stay around to rear them.

Group 5, Adolescent-limited group. This group consisted of 26% of the cohort and had unremarkable antisocial behaviour in childhood but repeated delinquent involvement in adolescence. They were involved in a high number of property and drug offences. They self-reported a number of mental health symptoms but had better work histories and were in more skilled occupations than the life-course-persistent group. They had normal IQ, were good readers, experienced average family relationships and had a close attachment to their parents. Moffitt et al. (2002) described this group as "experiencing a prolonged and unprecedented maturity gap" (p. 200). This maturity gap could prove problematic if this group slipped into crime and developed more sophisticated antisocial behaviours. Half of this group out-grew their antisocial behaviour.

1.5.3 Educational Outcomes. The educational outcomes for children who are at-risk of antisocial development are bleak. At school, such children are more likely to experience peer and teacher rejection because of their lack of social skills. As a result, they lose valuable learning experiences and are more likely to experience academic failure as well as being labelled "behaviour disordered" (Walker et al., 2004). In a follow up of the Patterson (1983) study (as cited in Walker, Shinn, O'Neill, & Ramsey, 1987), Walker et al. found in their fifth grade cohort of 16 antisocial and 19 non-antisocial boys that the antisocial boys spent less time academically engaged, more time in negative interactions in the playground, and received more disciplinary contact with teachers than the non-antisocial boys.

In summary, children with early onset antisocial development are more likely to acquire a later diagnosis of conduct disorder, to experience ongoing mental health problems, to be involved in delinquent activities/groups, to experiment with new forms of deviant behaviour, to develop alcohol and/or drug dependency, to experience early pregnancy or fatherhood, to be unemployed, to acquire criminal convictions, to have a lifelong dependency on social services, to be involved in domestic violence and to experience multiple separations/divorces.

1.5.4 The Social Costs of Antisocial Development. Youth and adult offending is very costly to society. In 2001, the New Zealand Department of Corrections estimated that for every recidivist offender, the cost to the taxpayer over the lifetime of the offender is approximately $3,000,000. Hill, Lochman, Coie, Greenburg and the Conduct Problems Prevention Research Group (2004) estimate that the cost of not identifying early onset antisocial development was $2 million per child of a life time of crime plus $600,000 in social costs.

Using outcome data collected at age 26 from the Chicago Longitudinal Study, Reynolds, Temple, White, Ou and Robertson (2011) undertook a cost analysis of the Child-Parent Center's preschool programme with the results showing that for every $1 invested in this early intervention family programme there was a total return to society of $10.83. Likewise, the extended intervention programme (4-6 years) had a societal annual return of $8.24 while the school-age programme had a societal return of $3.97 per dollar spent. Benefits of the programme were seen in increased earnings, tax revenue and averted justice system costs. The greatest benefits were for the three-year old male children and children coming from high risk families.

It can be seen therefore that if early intervention could halt and reverse antisocial development then such interventions could turn out to be highly cost effective. Early intervention is only possible if the children who are at-risk of antisocial development can be reliability identified.

1.6 Early Identification of Antisocial Development

The New Zealand longitudinal studies (refer to Fergusson et al., 2009; Fergusson & Horwood, 2002; Fergusson et al., 1995; Moffitt, 1993; Moffitt et al., 2002) make it clear that the children who are most at risk of adverse outcomes in adulthood are the children who have failed to learn to comply with adult instructions and who have failed to acquire self-control over coercive and aggressive responses during the first five years of life. It follows that the earlier these socialisation failures can be identified the sooner some kind of effective remedial intervention can be supplied.

Those working in the field of antisocial development know *when* and *how* to intervene because reviews by the New Zealand Advisory Group on Conduct Problems (AGCP) into what works to halt and reverse antisocial development at ages 3- to -7, 8- to -12 and 13- to -17 years show it is parenting programmes designed for 3- to -7 year olds which have the strongest effect (AGCP, 2009; 2011; 2013). For this age group, parenting programmes such as Triple P (Martin & Sanders, 2003), Incredible Years (Webster-Stratton, 1984; 1985) and the Parent Management Training-Oregon (PMT-O) (Ogden & Amlund Hagen, 2008) show the strongest effects. Another evidence-based parenting programme is Parent-Child Interaction Therapy (PCIT) (Thomas & Zimmer-Gembeck, 2011) where parents receive, in a clinic setting, one-to-one coaching while playing with their child via a "bug in the ear" from a therapist working behind a one-way window. These programmes are all similar in that they improve parenting interactions and reduce child problem behaviour by promoting positive behaviour practices.

Triple P, Incredible Years, PMT-O and PCIT programmes have all been evaluated using multiple randomised trials with the results showing that antisocial development is halted in approximately 60 percent of children with high rate conduct problems in the 3- to -8 year age group. The evidence base, however, is thin for children aged 8- to -12 years with only a few well controlled evaluations. The PMT-O evaluations indicate that the success rate for older children with clinical levels of behaviour problems tends to decrease to about 30 percent (Reid, 1993). This finding is consistent with current views on the aetiology of antisocial development. Well socialised children use hundreds of social skills every day and as they get older these skills become more sophisticated and automatic. In contrast, antisocial children become more sophisticated and automatic in their use of coercive behaviours. As the child ages it becomes more difficult to halt antisocial development and interventions which were effective for young

children have diminishing effects the older the antisocial child becomes and, as a consequence, more intensive interventions are required the older the antisocial child becomes.

Given the cost to society of not intervening, it follows that some kind of diagnostic screening for early onset antisocial development is indicated. If early screening for antisocial development is being contemplated then there is only one institution which comes into contact with all 5- and 6- year old children and that is school. This raises the question of whether or not school personnel could be trained to identify early onset antisocial development.

1.7 Screening of Children At-Risk of Antisocial Development

Population screening procedures were initially developed for screening young children for medical conditions such as impaired vision and impaired hearing. Recently these procedures have begun to be adapted for screening young learners with language delays, reading delay, and delays in social development. The terms *screening* and *assessment* are not interchangeable. Screening is the preliminary process that identifies, from all the children, those who may be at-risk for future behaviour and learning difficulties. In contrast, assessment informs teachers how well their students learn with the information gained used to improve the student's learning and/or behaviour outcomes.

The technical requirements to meet any screening procedure, whether medical or psychological, have been described by a number of authors (Christ & Nelson, 2014; Glover & Albers, 2007: Kettler, Glover, Albers, & Feeney-Kettler, 2014). Screening procedures must also meet established levels of technical adequacy, that is, they must meet conventional levels of predictive accuracy (Christ & Nelson, 2014; Glover & Albers, 2007; Hill et al., 2004; Pesco & O'Neill, 2012).

1.7.1 Characteristics of an Effective Screening Tool. The psychometric properties of a sound screening tool include its standardisation, reliability, validity, sensitivity, specificity, positive predictive value and negative predictive value.

Standardisation. A screening tool should be standardised against a large population of children from different geographical areas, socioeconomic and ethnic backgrounds, age and gender. This sets the *normative* base for a screening tool. Ideally, the screening tool should be standardised for each target population that the screen claims to identify.

Reliability. A screening tool should give similar results for an individual each time it is administered irrespective of time intervals or who is administering or scoring the test.

Validity. In relation to screening measures, criterion validity refers to the accuracy with which scores on the screening measures predict an external criterion which is typically a gold standard dichotomous measure of the morbidity or difficulties that require detection.

Reproduced in Table 1 is Kettler and Feeney-Kettler's (2011, pg. 436) Conditional Probability Framework which depicts the framework between the screening instrument and reality.

Table 1: *Conditional Probability Framework*

	Reality (as defined by established measure)		
Screening result	At risk	Not at risk	Total
At risk	a (true positives)	b (false positives)	a + b
Not at risk	c (false negatives)	d (true negatives)	c + d
Total	a + c	b + d	a + b + c = d

Note. Sensitivity = [a / (a + c)], specificity = [d / (b + d)], positive predictive value = [a / (a + b)], negative predictive value = [d / (c + d)], base rate/prevalence = [a + c / (a + b + c + d)], hit rate/accuracy = [(a + d) / (a + b + c + d)].

Sensitivity. Sensitivity refers to the proportion of individuals with the disorder (in this case a child with early onset antisocial development) who are correctly identified by the screening tool as having the disorder. Sensitivity is found by dividing the number of true positives by the number of true positives added to the number of false negatives *(TP / [TP + FN]).*

Specificity. Specificity refers to the proportion of individuals without the disorder (in this case a child who does not have early onset antisocial development) who are identified correctly as not having the disorder. This is found by dividing the number of true negatives by the number of false positives added to the number of true negatives *(TN / [FP + TN]).*

Positive predictive value (PPV). This identifies the proportion of those who are identified as positive by the test in question (in this case as having early onset antisocial behaviour) who are correctly identified as such. This is given the number of true positives divided by the total number of positives' (both true and false positives) given by the test *(TP / [TP + FP]).*

Negative predictive value (NPV). This identifies the proportion of those who are identified as negative by the test in question (in this case as not having early onset antisocial development) who are correctly identified as such. This is given by the number of true negatives divided by the total number of negatives (both true and false negatives) given by the test (TN / [FN + TN]).

1.7.2 Measuring Screening Accuracy. The accuracy of screening is most commonly achieved using a *Receiver-Operating Characteristic (ROC)* curve analysis (Kettler et al., 2014). In a ROC analysis the *area under the curve* (AUC) ranges from .50 (a chance estimate suggesting an essentially worthless test) to 1.0 indicating a perfect prediction. An AUC greater than .50 but less than 1.0 indicates a better-than-chance prediction. A ROC curve can be viewed as an array of possible cut-off scores, each offering a different balance of benefit (sensitivity) and

cost (1 – specificity). There is no best cut-off score for all situations given that the consequences of classification errors vary. Failing to identify a student who needs help (a false negative) is one cost, and incorrectly identifying a student as having a problem (a false positive) is another cost. The best cut-off point balances the benefits (high sensitivity) against the costs (low specificity) depending on the purpose of the classification. For example, in breast cancer screening the cost of a false positive is worry and inconvenience, whereas the cost of a false negative can mean death. In behaviour prevention research, the cost of a false positive is the cost of a functional behavioural assessment in contrast to the cost of a false negative which may turn out to be the lifetime cost to the social agencies that have to support the child and then adult on an antisocial trajectory. In behaviour prevention research, false positives are preferred over false negatives.

Adding to this, Hill et al. (2004) make the point that not all authors report their findings in relation to the *base rate or prevalence* of the difficulty in the population. This is important as the sensitivity and specificity may sound impressive when reported without reference to the PPV and NPV. This is why it is important to calculate the screener's sensitivity, specificity, false negative and false positive rates in relation to the percentage of the *population* who present with the problem. Attaining a high PPV is difficult when the base rate is low and attaining high NPV is difficult when the base rate is high (Kettler et al., 2014). The lower the base rate or prevalence of a condition, the greater the need for accuracy in screening because precious resources can be wasted if the targeted intervention is delivered to those who do not require it (Hill et al., 2004).

1.7.3 Determining the Cost and Benefits. The ability of a screening procedure to correctly identify the proportion of true positives, that is, its *sensitivity*, is the property which is most important when screening for antisocial development. This is because the cost of failing to

identify a child with antisocial development deprives that child of access to an important intervention service, which might allow that child to continue post-intervention to lead a more prosocial life. Failing to identify a child with antisocial development may also result in very considerable social costs over the lifetime of the child who was missed. *Specificity* is the proportion of false positives correctly identified. Low specificity also has a cost. The cost is treating a child who does not need to be treated. This should not be a cause for concern. A child who presents with elevated rates of disruptive behaviours still needs an intervention to manage the disruptive behaviour and to teach self-regulation even if he or she is not at-risk of antisocial development.

Every screening system will produce classification errors. Researchers appear undecided on how to balance the costs and benefits of false positives and false negatives. As a way to overcome this difficulty, Cicchetti, Volkmar, Klin, and Showalter (1995) recommend sensitivity and specificity in the range of .90-1.00 (excellent), .80-.90 (good), .80-.70 (fair), and under .70 (poor), but Glover and Albers (2007) recommend the lower range of .75 to .80 as acceptable across sensitivity, specificity and PPV. In contrast, Walker and colleagues (2014) advocate .95 as an indicator of an excellent screener, .90 as a good screener and anything above .75 as an acceptable screener but, as they state, consideration must also be given to goals of the screening, the ratio of false positives to false negatives, the context and populations in which one is working. Reproduced in Table 2 is Kettler and Feeney-Kettler's (2011, pg. 437) summary of the effects of a range of conditional probabilities for sensitivity, specificity, PPV and NPV and the impact of the different index values on the potential conditions for each to be acceptable.

Table 2: *Ranges of Conditional Probability Index Values and Potential Conditions for each to be Acceptable or Required*

Range	Label	Sensitivity	Specificity	PPV	NPV
.00 ≤ index < .40	Very low	Not acceptable	Not acceptable	Not acceptable	Not acceptable
.40 ≤ index < .60	Low	False (+) more costly	False (-) more costly	False (-) more costly, low base rate	False (+) more costly, high base rate
.60 ≤ index < .80	Moderate	Equal cost	Equal cost	Equal cost	Equal cost
.80 or greater	High	False (-) more costly	False (+) more costly	False (+) more costly, high base rate	False (-) more costly, low base rate

Note. PPV = Positive predictive value, NPV = Negative predictive value, (+) = Positive, (-) = Negative.

To date, there does not appear to be a recommended range to follow but this could be because of the complexities around the context and the purpose of the screening itself.

1.7.4 Issues Associated with Universal Screening in Schools. A number of issues associated with behavioural screening in schools and kindergartens have been reported. These include:

Ethical issues. Chafouleas, Kilgus and Wallach (2010) draws attention to the ethical issues associated with gaining informed parental consent before teachers undertake screening procedures. They argue that parental consent is not required when screening (and subsequent assessment) is used to identify and then provide intervention support as part of the regular classroom programme but cautioned the need for informed consent when intervention programmes cross to the home environment as this could be an invasion of a family's privacy. An additional ethical problem is that if a child has been accurately identified, less than 2% of these children receive appropriate services (Walker & Severson, 1992a). Moreover, Chafouleas, Kilgus, et al. (2010) and Lane, Oakes and Menzies (2010) add, that if schools make the decision

to implement behaviour screening practices it would be irresponsible and unethical of them, because of a lack of capacity or resources, then to deny students, who are identified as requiring additional support, an intervention programme. The time and resources used for screening would then also be wasted.

Children labelled. Parents and teachers appear reluctant to refer at-risk children for screening because they think the child may be labelled "antisocial" (or other such names) and carry this label for all of their school days (Chafouleas, Kilgus, et al. 2010). Reluctance to refer may also be because of a teacher's lack of skill and training in the prevention and remediation of antisocial behaviour (Chandler, Dahlquist, Repp & Feltz, 1999; Forman, Jofen, & Lubin, 2014).

Cost of screening. The cost of a screening instrument may be prohibitive to some kindergartens and schools but the benefits greatly outweigh the cost (and time training). The earlier the child receives early intervention the less likely the need for long-term intensive intervention (Dever, Raines, & Barclay, 2012).

When to screen? The *when* to screen is one of the major uncertainties of behavioural screening and there are very few practical guidelines to assist schools to make this decision (Dowdy et al., 2013). Caldarella, Young, Richardson, Young, and Young (2008) and Husky, Sheridan, McGuire and Olfson (2011) call for systematic and continuous screening to occur as a way to pre-empt the current *wait to fail* model, but suggestions on when to do this are contradictory. Chafouleas, Volpe, Gresham, and Cook (2010) do not suggest a timeframe but suggest screening should be proactive and continuous, whereas, Walker and colleagues (2014) recommend three times each year with the teacher knowing the student for at least five to six weeks before screening. In the CI3T model, Lane, et al. (2014) recommend twice yearly. At the

present time, it appears screening times are based more on practicality rather than empirical support (Dowdy et al., 2013).

Kindergarten and school resources. Kindergartens and schools have finite resources. Many schools simply do not have the budget, resources or training to provide the level of service screening requires for identifying children at-risk of antisocial development. To save resources, schools appear to be committing to using behavioural screening procedures which only use teacher nominations and rating scales and do not include direct observations as these are the most time consuming and expensive to operate (Ivannone et al., 2009; Lane, Kalberg, Bruhn, Mahoney, & Driscoll, 2008; Nelson, Stage, Trout, Duppong-Hurley, & Epstein, 2008).

Practicality of screening tools. Most diagnostic screening instruments require a trained professional to administer. Teachers may be more willing to undertake the screening process if the screening tools were more practical and proactive (rather than reactive), relate specifically to the classroom situation, take only a small amount of time and require little training (Walker et al. 2014). Furthermore, screening procedures should be responsive to the RTI intervention model (Gresham, 2005; Kamphaus, Reynolds, & Dever, 2014) and be administered with the same frequency as academic screening (Oakes et al., 2010).

Classroom screening data. Once screening data has been collected, it should be used to establish clear links between the screening and the resulting assessment and intervention plan, however, it is not uncommon for teachers to collect data that are never used, or used for only a small proportion of a student's programme (Elliot, Gresham, Frank, & Beddow, 2008; Parisi, Ihlo, & Glover, 2014). Information pertaining to both acquisition and performance deficits of both social and academic skills should be included in the screening process then evidence-based interventions could be designed and implemented with the appropriate intensity and integrity.

Is direct observation necessary for screening? A small number of screening studies indicate direct observation (Gate 3 of a multiple gating screening procedure) is unnecessary. Cheney et al. (2009), Tsai and Cheney (2012), Young, Sabbah, Young, Resier and Richardson (2010) and B. Walker, Cheney, Stage, and Blum (2005) limited their screening procedures to Gate 1 teacher nominations and Gate 2 rating scales with the justification that students who pass through Gate 2 were at moderate risk of developing further emotional or behavioural problems and this information was enough to develop an intervention plan. Gate 3 was made redundant. These researchers based their decision on an article by McKinney, Montague and Hocutt (1997) that used the Systematic Screening for Behavior Disorders (SSBD) as a means of classifying 624 at-risk kindergarten/first grade students as low, moderate or high risk based on the number of gates passed during the multiple gating screening process. Their findings indicate that 14% of the students were identified as low risk (*n = 92*), that is, did not pass Gate 2; 10% as moderate risk (*n = 63*), that is, passed Gate 2 but did not pass Gate 3; and 4.5% as high risk (*n = 28*), that is, passed all three gates. It appears from this one study Cheney and colleagues have assumed the third gate is unnecessary.

1.8 Diagnostic Screening Procedures

Early intervention is only possible if at-risk status can be identified early. This identification has been attempted using a range of procedures such as teacher nominations, checklists and rating scales, direct observations, functional behavioural assessments and multiple gating procedures. Because all children are required by law to attend school, the profession and setting best placed to make this early identification is teachers and schools.

1.8.1. Teacher Nominations. Teachers have shown that they can be quite accurate in identifying children who engage in persistent antisocial behaviour (Caldarella et al., 2008; Lane, 2003; Oakes et al., 2010). This is probably because they have numerous opportunities to observe each child over different activities and over extended time periods. They also work with large numbers of typically developing children and this enables them to make judgement about whether a child's development falls within or outside the normal range for a given age group. As Walker et al. (2014) point out, screening large numbers of children can occur very quickly but Gate 1 is highly dependent on the accuracy of teacher judgement and is therefore the most important gate of the multiple gating model as this gate drives the outcomes for the remaining gates. Lack of precision in the early stages of a multiple screening procedure can be a threat to the integrity of the model (Charlebois, LeBlanc, Gagnon, & Larivee, 1994) but as both Lane (2003) and Walker and colleagues (2014) report, teachers are highly accurate in identifying those children at-risk of antisocial development.

Teacher nominations are not without criticism. Dowdy et al., (2011) report (1) teachers have been shown to under-report behaviour problems, (2) teacher referral is subject to their understanding of the student's teachability, (3) compared to academic referral, teachers tend to delay behavioural referrals, and (4) teachers lack consistency or understanding of what constitutes behaviour problems and as a result, some students may miss out on referral at the first gate.

1.8.2 Teacher Rating Scales. A number of checklists and behaviour rating scales have been developed to identify antisocial development in children. These scales make use of different

items, different number of items and different scoring procedures. An overview of the most common rating scales used by education psychologists and/or teachers include:

Behavioral Assessment System for Children (BASC-2). The BASC-2 is designed to measure adaptive skills and internalising and externalising behaviour problems in three age groups; preschool children aged 2 to 5 years, children aged 6 to 11 years and adolescents aged 12 to 21 years old (Reynolds & Kamphaus, 2004). The Teacher Rating Scale (TRS) contains 100 to 139 items and the Parent Rating Scale (PRS) contains 60 to 134 items depending on whether it is the preschool, child or adolescent form. Scoring occurs on a four-point frequency scale (0= *never*, 1 = *sometimes*, 2 = *often*, and 3 = *almost always*) with each scale taking 10-15 minutes to complete. Internal consistency yielded coefficient alpha reliabilities in the .90s for the composite scales and .80s for the individual scales across all forms. Test-retest reliability yielded correlations in the .80s. Correlations were in the .70 and .80s between the BASC-2 and the Achenbach System of Empirically Based Assessment Caregiver – Teacher Report Form (ASEBA) (Achenbach & Rescorla, 2001) and the Conners Teacher Rating Scale Revised (CTSR-R) (Conners, 1989).

Behavioral and Emotional Screening System (BESS). A short version of the BASC-2 is the BESS (Kamphaus & Reynolds, 2007). Like the BASC-2 separate scales exist for preschool teachers, primary teachers, grade 3-12 students and parents. Each scale takes approximately 5 minutes to complete. The teacher scale has 27 items, the preschool teacher scale 25 items, and the parent and student scales each contain 30 items. Each scale gives a sub-score for externalising, internalising and adaptive behaviours. Total *T* scores are classified as *extremely elevated risk* (71 or higher), *elevated risk* (61-70) or *normal development* (20-60). Detailed information on the development of the scales and standardisation are presented in the BESS

manual (Kamphaus & Reynolds, 2007). The psychometric properties across all forms appear acceptable with test-retest reliability (.80-.91), inter rater reliability (.71-.83), internal consistency (.90-.97) and concurrent validity with the Child Behavior Checklist List (CBCL) (Achenbach & Rescorla, 2001) (0.76) and the BACS-2. Within the norming sample of BASC-2, the BESS yielded sensitivity = .80, PPV = .76, specificity = .97 and NPV = .96 (Kamphaus & Reynolds, 2007).

Social Skills Improvement System- Revised (SSiS-RS). The revised SSiS-RS (Elliot & Gresham, 2007) is also designed for teacher, parent and student use and consists of preschool, primary and secondary school versions. The SSiS rating scales measures six Social Skills, five Total Problem Behaviors, and seven Academic Competence items; overall the teachers scale has 67 items. This instrument is available commercially and takes 15 to 20 minutes to complete. Gresham, Elliot, Vance and Cook (2011) report internal consistency, as measured by coefficient alpha, in the mid- to upper .90 for the Social Skills and Total Problem Behavior scales and in the upper .90 for the Academic Competence scale. The subscale reliability for the teacher form was in the mid- .80. Test-retest reliability for the teacher Social Skills form was .82, and the Total Problem Scale .83. Comparability of the SSIS-RS and Student Risk Screening Scale (SSRS) (Drummond, 1994) indicated the SSiS-RS showed internal consistency higher across the Social Skills, Total Problem Behavior and the Academic Competence Forms with the lowest coefficient alpha over the three forms of .94.

The Strengths and Difficulties Questionnaire (SDQ). Goodman's (1997) SDQ is designed for teachers and parents to use with children aged 3-to 17 years old. There is also a student version for 11- to 17 year olds. The scale takes approximately 3 minutes to complete. It is freely available on the internet. The SDQ consists of 25 items covering five dimensions. The

reliability of this scale is satisfactory with an internal consistency (mean = Cronbach's alpha .80-.87) and test-retest reliability of .70-.85. Rated by teachers against the CBCL, the SDQ provided a sensitivity = 43%, PPV = 44%, specificity = 95% and NPV = 94%. The SDQ is currently used by the New Zealand Ministry of Health as part of its *Before Schools Check* for all four-year old children.

The Systematic Screening for Behavior Disorders (SSBD). The SSBD (Walker & Severson, 1992a; 1992b) is designed for teachers to use with kindergarten to grade 6 students to screen for externalising and internalising behaviour disorders. The SSBD has, more recently, been modified for use in middle and high schools (Caldarella et al., 2008; Kalberg, Lane, Driscoll & Wehby, 2011). The SSBD is sold commercially and consists of a Combined Frequency Index which consists of two rating scales: the Adaptive Behavior Rating Scale (ABS) and the Maladaptive Behavior Rating Scale (MBS), and a Critical Events Index (CEI). The ABS is a short scale of 12 prosocial items and contains items such as *follows established classroom rules* and *initiates positive social interactions with peers*. The MBS consists of 11 items and refers to high frequency behaviours that can be seen by teachers such as *refuses to participate in games and activities with other children at recess* and *uses coercive tactics to force the submission of peers*. Both scales are scored on a 5-point Likert scale from *never* to *frequently*. The CEI is a checklist of 33 Yes/No items of which 13 refer to antisocial behaviours such as *steals* and *physically assaults an adult*. The ABS and MBS takes 45 minutes to complete for 6 nominated students.

Walker and Severson (1992b) report internal consistency over two rating occasions on the ABS and MBS showed coefficient alpha of .85 and .88 and .82 and .87 respectively. The stability of the teacher ratings over a one month period was .88 for the ABS and .83 for the MBS.

The item-total correlations ranged from r = -.241 to .747. The ABS (externalising) correlations at rating times 1 and 2 were r = -.63 and r = -.68 ($p < .001$) and r = .81 and r = .77 ($p < .001$) for the MBS. With a national normative sample of 4,500 cases, the CEI and CEI inter-rater reliability coefficent for externalising behaviour was between .89 to .94 and for internalising behaviour .73 to .88 (Severson, Walker, Hope-Doolittle, Kratochwill, & Gresham, 2007). The SSBD is comparable to the Teacher Report Form (Achenbach & Rescorla, 2001) for youth referred for mental health problems as the ABS and the MBS correctly identified 85% youth with 7% false negatives and 8% false positives (Walker et al., 1994). Similar results were also found at middle and junior school (Caldarella et al., 2008). Kamphaus et al, (2014) suggest longitudinal evidence of predictive validity of scores is still required.

Student Risk Screening Scale (SRSS). Drummond's (1994) SRSS is a publicly available instrument to identify primary school students at-risk of antisocial behaviour. On a Likert scale ranging from 0 to 3 (0 = *never*, 1 = *occasionally*, 2 = *sometimes*, 3 = *frequently*) teachers rate each student on seven items: steals; lies, cheats, sneaks; behaviour problems, peer rejection, low achievement, negative attitude and aggressive behaviour. Scores are then split into *low risk* (scores 0-3), *some risk* (scores 4-8) and *high risk* (scores 9-21). It takes approximately 15 minutes to screen a class of 25 students.

A strong body of research supports this scale. Lane and colleagues have demonstrated internal consistency, Cronbach's alpha = .78-.86 and test-retest reliability with a correlation coefficient .56-.80 across primary, middle and high school samples. The SRSS positively correlates (r = .79) with the Aggressive Behavior sub-scale on the Child Behavior Checklist (Achenbach, 1991) and predicts negative academic and behavioural outcomes from 1.5 to 10 years of age (Menzies & Lane, 2012). Lane, Little et al. (2009) found the SRSS is more accurate

at identifying externalising (*AUC* = .95) than internalising behaviour problems (*AUC* = .80) as measured against the SSBD with a sensitivity of 82% to 95%; PPV of 28% to 60%; specificity of 75% to 95% and NPV of 99%.

The Sutter-Eyberg Student Behavior Inventory (SESBI). The SESBI is the teacher version of the Eyberg Child Behavior Inventory (ECBI) (Eyberg & Pincus, 1999). It is designed for 3- to 16- year olds and takes 5 to 10 minutes to complete. The scale has 36 items and generates an Intensity Scale which measures the frequency of problem behaviour on a 7-point scale (1 = *never* to 7 = *always*). The Problem Scale measures the degree to which the student's behaviour is problematic for the teacher on a yes-no scale. Internal consistency as reported by Floyd, Rayfield, Eyberg, and Riley (2004) and measured by Cronbach's alpha for the Intensity Scale was .97 and .95 for the Problem Scale. The average corrected item-to-total correlation for the Intensity Scale was .72 and .59 for the Problem Scale. In addition, Querido and Eyberg (2003) found in their preschool sample, test - retest reliability for the Intensity Scale was .81 (n = 52) and for the Problem Scale .84 (n = 50). Correlation with the Conners Teacher Rating Scale was r = .74.

The Child Behavior Checklist (CBCL). The revised Child Behavior Checklist (Achenbach & Rescorla, 2001) is also used to identifying problem behaviour in children and youth from age 1.5 to 18 years. Along with the CBCL there is also a Youth Self Report (YSR) and a Teacher's Report Form (TRF). The TRF is four pages covering academic and adaptive items. On the scale there are 113 items and these are scored from 0 = *not true*, 1 = *somewhat or sometimes true*, 2 = *very true* or *often true*. Test-retest reliability correlations ranged from .91 to .95 for the Total Competence, Total Adaptive function and Total Problems scores. Internal consistency as measured by Cronbach's alpha was .90 on the Adaptive Scale, .72 to .95 for the Problem Scale

and .73 to .94 on the DSM-oriented scale. When selecting predictors from all competence items, the discriminative analyses achieved 80%. The TRF corrected classified 85% of the children with 7% false negatives and 8% false positives.

The Canterbury Social Development Scale (CSDS). This scale was developed by Church and colleagues for the New Zealand context (refer to Chapter 3 for an overview of this scale's development). The scale has been developed for four specific Year groups: Kindergarten (ages 3-4 years), Years 1 – 4 (ages 4-8 years), Years 5 - 8 (ages 9-12 years) and Years 9 – 10 (ages 13-15 years). The scale contains 15 prosocial and 15 antisocial items and is scored from 0-150 with the higher score representing prosocial behaviours. As reported by Tyler-Merrick and Church (2012) the scale has strong sensitivity (99%) and specificity (91%) with a PPV of 90% and NPV of 99%. Accuracy was recorded at 95%. A full description of this scale is provided in Chapter 3.

A range of rating scales which are used in schools have been presented. Some of the scales were designed to identify multiple disorders so are too long to use as a behavioural screener. The number of items per scale vary considerably from 7 (SRSS) to 134 (BASC-2); because teachers are busy they may have reservations about using such long scales as a regular screening tool. Likewise, teachers may need additional training to complete the longer scales whereas the shorter scales require very little training. Overall, there is a small range of psychometrically sound rating scales available for teachers to use as a regular behavioural screening tool in their classroom.

1.8.3 Direct Observations. Antisocial behaviours occur in social contexts and need to be observed in the context in which the behaviours occur. This has led to a range of direct

observation systems being used in the home and classroom. Presented below are the direct observation procedures which have presented psychometric properties.

Academic Engaged Time (AET) and Peer Social Behavior (PSB) - SSBD. The Academic Engaged Time AET) and Peer Social Behavior (PSB) observation codes are both used in the third gate of Walker and Severson's (1992a) Systematic Screening for Behavioral Disorders assessment. The AET measures the duration of time a student engages in academic activities during independent seat work such as listening to the teacher or writing in a workbook. Using a ten-second interval recording system, PSB is measured during playground interactions. Children's social behaviour is coded according to five categories: social engagement, participation, parallel play, alone, and no code. Each observation lasts 15 minutes. Teachers/recorders need to be trained to undertake these two observations. Mean interobserver agreement for the AET ranged across studies from .95 (Walker et al., 1994) to .98 (Quinn, Mathur, & Rutherford, 1995). Coefficients for individual cases range from .80 to 1.00 and the scores from the AET correlate (r = -.42) with the externalising behaviour rating scale. Interobserver agreements for the PSB are in the acceptable range of .78 to .90.

The Dyadic Parent-Child Interaction Coding System (DPICS). Another widely used system is the DPICS. This is a home based system which is being used to evaluate Parent-Child Interaction Therapy (Eyberg, Nelson, Duke, & Boggs, 2009). The observations are conducted in three standard parent-child interaction situations, child-led play (CLP), parent-led play (PLP) and a clean-up (CU) session in which verbalisations such as descriptive praise, vocalisations such as whining, and physical behaviours such as positive touching are categorised and then coded for both child and parent. The CLP, the PLP and the CU game occur for five minutes each. The parent and child are typically observed and coded from behind a one-way mirror with the

therapist using a "bug-in-the-ear" communication device to communicate and present directions to the parent. As cited in Eyberg et al. (2009), Bessmer and Eyberg (1993) found interobserver reliability of their 20 mother-child dyads during the CLP over the parent and child observation categories ranged from 17% to 85% and 39% to 71% agreements respectively. During the PLP observations, the parent and child category agreements ranged from 33% to 87% and 56% to 94% respectively. Similar percentage of interrater reliability agreements were found when Bessmer, Brestan, and Eyberg (2005, as cited in Eyberg et al. 2009) videoed 30 non-referred and 30 referred mother-child dyads for treatment of ODD and found over all observation categories 21% to 85% agreement for the mothers and 17% to 80% agreement for the child observations. Webster-Stratton (1985) found that scores on the ECBI Problem Scale, which measures how problematic the child's disruptive behaviour is to the parent, were positively correlated with child deviance and child noncompliance on the DPICS.

Revised Edition of the School Observation Coding System (REDSOCS). The REDSOCS observation system (Ginn, Seib, Boggs, & Eyberg, 2009) is used to evaluate change in children aged 3-to 6 years following Parent-Child Interaction Therapy. Observations take place during a structured classroom lesson such as reading or maths. Interval recordings occur for three behavioural categories: inappropriate behaviour, noncompliant behaviour, and off-task behaviour. Observation can take from 20 min to one hour to complete. Each observation comprises 10 coded minutes per child, with each minute of coding separated by a 1 to 3 minute break period for the coder. Three observations occur over a two week period. Treatment sensitivity has been established for two of the three REDSOCS categories, Inappropriate Behaviour, t (33) = 3.10, p = .004, and Off-Task Behaviour, t (33) = 2.72, p = .010. Interobserver reliability on REDSOCS categories was moderate to high, with percentage

agreement ranging from 47% to 90% (*M* = 67%) and Cohen's kappa coefficients ranging from .69 to .95 (*M* = .82). Convergent validity of the REDSOCS categories was supported by significant correlations with the Intensity Scale of the Sutter-Eyberg Student Behavior Inventory-Revised and related subscales of the Conners Teacher Rating Scale-Revised: Long Version (CTRS-R: L). Overall the REDSOCS coding system correctly classified 80% of children with reported school behaviour problems and 53% of children without reported school behaviour problems.

Direct Behavior Rating Single Item Scale (DBR-SIS). An emerging system that teachers can use is the Direct Behavior Rating Single Item Scale (DBR-SIS) (Kilgus, Chafouleas, Riley-Tillman, & Welsh, 2012). Kilgus et al. has referred to the DBR-SIS as a multiple gating procedure but this procedure does not employ sequential gates rather the three behavioural categories recorded are rated at a single stage, albeit at multiple times. Direct observation data is taken on academic engagement (AE), disruptive behaviour (DB) and respectful behaviour (RB). After a pre-specified time, the teacher makes a rating reflecting their observation of each of these behaviours on a graph. The recording form is divided into 10 segments numbered 0 (*never*) to 10 (*always)* on the axis and the teacher marks the number which best represents the behaviour displayed for that time period. For example, if they mark 6 for AE, this would represent that during the observation time the student spent 60% in academically engaged work. This is then repeated, on the same graph, for disruptive and respectful behaviour. In addition, the teacher is requested to mark with a score from 0 = *never* to 2 = *always* each of the following three questions: "Did the student follow the class rules?", "Did the student follow teacher directions?", and "Did the student do his/her best?" Depending on the time specified, the observations can take a few minutes to a number of hours (Chafouleas, Briesch, Riley-Tillman, Christ, Black &

Kilgus, 2010) and it is completed by the teacher who had the most contact with the student during the previous four weeks. As the rating only takes a few seconds, the DBS-SIS can be easily repeated; collecting a large number of data points across the school day relative to one or more students.

This work has shown the best predictors of early onset antisocial development change with age, with disruptive behaviour producing better predictions for young children and on-task behaviour providing better predictions for older students. Kilgus, Riley-Tillman, Charfouleas, Christ and Welsh (2014) compared the DBR-SIS to the BESS and SRSS with the SRSS yielding higher *area under the curve* (AUC) scores than the disruptive behaviour, academic engagement and respective behaviour categories of the DBR-SIS across all three grades. At grade 1, the DBR-SIS AUC scores ranged from .78 to .85 across the three scales compared to the SRSS score of .90. The AUC ranged, at grade 4, on the three DBR-SIS scales from .68 to .84 with the SRSS scoring .92. Grade 7 was similar to grade 1 scores in that the DBR-SIS AUC scores on the three scales ranged from .79 to .87 and on the SRSS .92. A very similar range of AUC scores was also found when Chafouleas et al. (2013) repeated the same measures across lower, middle and upper elementary grade levels.

Direct observations, although expensive in terms of time and effort, are the only method of checking the accuracy of rating scale results. In this way, no diagnostic errors can occur (Church, 2006; Hosp, Howell, & Hosp, 2003).

1.8.4 Functional Behavioural Assessment. Rating scales record only behaviour; they cannot take into account the fact that the same behaviour can serve several different functions. Distinction between the different types (or function) of behaviour requires interviews and/or

direct observation of the consequences of different classes of behaviour. This has led to the development of assessment procedures which capture both behaviour and its outcomes. Functional behavioural assessment (FBA) is an assessment procedure which aims to identify the function or purpose served by the participant's behaviour (Kamps, Wendland, & Culpepper, 2006; Larson & Maag, 1998; Umbreit et al., 2007). In order for an intervention to be effective, teachers (and researchers) first need to identify the purpose that an antisocial behaviour serves. Early types of rating scales did not capture this information (Church, 2006; Hosp et al., 2003).

Functional behavioural assessment seeks to identify two main things: first, the situations or circumstances in which the student engages in particular problem behaviour and second, the consequences that reinforce and maintain that behaviour (Gresham, 2007a; Umbreit et al., 2007). Various methods can be used to record the antecedents and consequences of particular child behaviours. These include the use of interviews, questionnaires and direct observations. These assessments are then analysed and a hypothesis is developed as to the purpose served by the behaviour. This hypothesis is then tested to demonstrate its truth, for example, to see whether the behaviour is positively (or negatively) reinforced by adults getting the child something they want, or by enabling the child to avoid something they do not want. Intervention plans based on the function of the behaviour are then developed from these findings (Gresham, 2007b; Umbreit et al., 2007).

Functional assessment has been widely used in clinical settings to identify the motivation for many different kinds of antisocial behaviour. More recently FBA has been used to identify the causes of academic as well as behavioural problems. Functional assessment has been successfully used in the home (Fittig & Barton, 2013), in preschools (e.g. Nahgahgwon,

Umbreit, Liaupsin, & Turton, 2010; Umbriet & Blair, 1997) and in the general classroom (e.g. Crone, Hawken, & Bergstrom, 2007; Lane, Weisenbach, Little, Phillips, & Wehby, 2006).

There are limitations to FBA. Direct observations are expensive in terms of time and people resources and require expertise most teachers do not have (Iwata et al., 2000). If undertaken, teachers struggle to implement FBA procedures into their regular school practice (Loman & Horner, 2013) and when they do most teachers fail to use the FBA data to generate intervention plans (Pence, St Peter, & Giles, 2014). In consideration of these factors, the cost of several hours of teacher training and the subsequent direct observations is negligible when compared to the cost of no, or an ineffective, intervention.

1.8.5 Multiple Gating Procedures: The Systematic Screening for Behavior Disorders (SSBD). One procedure that has been shown to be accurate in screening for children with persistent antisocial behaviour is the multiple gating procedure. This procedure is a cost effective three-stage universal screening procedure that initially assesses every child in a class for antisocial behaviour. A key feature of a universal screening system is that it is proactive and allows for early detection and intervention assistance for those children at-risk of antisocial development (Cook, Volpe, & Livanis, 2010; Severson et al., 2007). As a rule, multiple-gating has proven superior to single occasion assessment using a single measure. Kilgus et al. (2012) found that the single-stage, single dimensional DBR scale has low specificity when compared with multi-dimensional ratings and that multi-dimensional assessments resulted in more correct decisions.

The multiple gating procedures contain a series of three interrelated gates or steps, with the child meeting a set criterion at each gate before progressing through the subsequent gates. It is a

linked, sequential assessment where a large population is sorted or narrowed at each gate. Each gate is more precise but it is also more expensive.

The Systematic Screening for Behavior Disorders (SSBD) procedure is a multiple gating procedure that has extensive empirical support for its reliability and predictive validity. The SSBD has recently been revised and developed into a web-based screening tool (Walker et al., 2014). The Early Screening Project (ESP) is a preschool adaption of the SSBD for use with 3-5 year old children (Feil, Severson & Walker, 1998). The ESP can detect children at-risk of antisocial development as young as three and four years of age (Feil & Becker, 1993; Feil, Walker, Severson, & Ball, 2000; Feil et al., 2005) and has been shown to be accurate in the identification of children at-risk of further antisocial development (Walker & Severson, 1992a; Feil et al., 2000). Kauffman (2001) describes the SSBD as the "gold standard" of screening tools. The SSBD is made up of the following procedures:

Gate 1

Gate 1 nominations start when the classroom teacher, who has known the student for at least 30 days, reads a behaviour description of externalising behaviours with items such as *arguing, defying the teacher* and *being out of seat*, and internalising behaviours with items such as *being shy, not talking with other children* and *timid and/or unassertive*. The teacher lists, and then ranks 10 (or 5 in the case of the ESP) children who are most like, or least like, the two behavioural descriptions. Children can only be on one list (not both). The three highest ranked children from each list then proceed to Gate 2.

Gate 2

For Gate 2, teachers complete two measures, the *Critical Events Index* (CEI) and the *Combined Frequency Index* (CFI). The CEI is a 33 item checklist of high intensity, low

frequency behaviours such as *steals*, *sets fires* and *severe weight loss*. The CFI comprises of the Adaptive Behavior Scale (ABS) and the Maladaptive Behavior Scale (MBS) and is administered to each of the three nominated children from Gate 1. The CFI assesses low density, high frequency behaviours on a 12 item ABS such as *does seat work as directed* and, on an 11 item MBS with items such as *pouts or sulks*. Students exceeding normative criteria proceed through to Gate 3. For externalising behaviours, a child progresses to Gate 3 if they score 5 or more on the CEI or if they score 4 or less on the CEI and 30 or less on the ABS and then 35 or more on the MBS. To progress to Gate 3 with internalising behaviours, the child would have to score 4 or more on the CEI or less than 3 on the CEI and 41 or less on the ABS and 19 or more on the MBS (Walker & Severson, 1992a).

Gate 2 of the ESP relies on a 16 item CEI, a nine item Aggressive Behavior Scale which is used to identify students with externalising behaviours, an Adaptive Behaviour Scale/Index which contains eight items and represents prosocial skills, and a nine item Maladaptive Behavior Scale which represents either antisocial or non-social forms of behaviour (Feil et al., 1995). All the scales cut off scores are set at 1 *SD* from the Mean.

Gate 3

For students progressing to Gate 3, a professional, other than the classroom teacher, conducts systematic observations of the nominated students from Gate 2. The Gate 3 direct observation involves two, 15 minute structured observations of *academic engagement time* (AET) during seat work and two, 15 minute duration recordings of *positive, and negative peer interactions* in the school playground during recess. The ESP in the preschool setting uses duration recordings of two, 10 minute observations of the child's antisocial and social behaviour in the classroom and playground via the Peer Social Behavior Code (PSB). These observations

are supplemented with qualitative notes about the nature of the behaviour being observed (Feil et al., 1995).

1.8.6. Piloting the Multiple Gating Procedure in New Zealand. During 2005, Church and colleagues piloted a three-gate screening procedure for the Ministry of Education with a sample of 131 3-15 year-old antisocial students and 131 control students (Church et al., 2006). At Gate 1, teachers completed a nomination form where they identified students in their class who met a predetermined definition of antisocial behaviour. No number was placed on their nominations. At Gate 2, teachers then completed a 30 item rating scale (Canterbury Social Development Rating Scale [CSDS]) with their nominated and control students. At Gate 3, researcher undertook one 15 minute observation during a structured classroom lesson and also one 15 minute observation during an unstructured lesson on the selected nominated and control students. The findings, as reported by Tyler-Merrick and Church (2012), indicate Gates 1 and 2 were very effective in identifying students at-risk of antisocial development but Gate 3 was not successful. Examination of the recording forms and discussion with the observers suggest that the low discriminant validity of the observations was probably due to the observation period being too short. There was also the possibility that the students were aware that the observers were observing them, thus, they engaged in appropriate behaviour. A solution to this problem is the basis of this current thesis.

The multiple gating procedures are very cost effective because children who do not meet the definition/profile of antisocial behaviour or who are identified through the ratings scale as not engaging in persistent antisocial behaviour are eliminated. Attention is then placed on the children who graduate to Gate 2 and then Gate 3. This screening procedure has been shown to

be accurate with students over a range of ages, ethnicities and behaviours (Simonsen & Bullis, 2007; Walker et al., 2014), and with a range of preschool children (Feil, & Severson, 1995).

1.8.7 Variations of the Gating Procedures. The most common variation to the multiple gating procedure is that the three gate procedure is reduced to just two gates; the teacher nominations at Gate 1 and the rating scales at Gate 2. This is achieved in three ways. First, the SSBD nomination form and SSBD rating scales are used as the two gates (see Sumi et al., 2013). Second, the SSBD nomination form is used at Gate 1and then a combination of rating scales such as the SRSS, SDQ and CBLC-TRF are used at Gate 2. This is the most common variation used at Gate 2. The third variation to the gating procedures involves the use of two rating scales; one for Gate 1 and another for Gate 2. For example, at Gate 1 the BESS is used as a universal classroom screener and if children do not meet the cut-off point they graduate to Gate 2 and receive the BASC-*2*. Appendix 1 provides examples of studies which use a variation of screening procedures at Gate 1 and Gate 2.

1.9 Procedural Fidelity

A key challenge and an important consideration when implementing any screening procedure and subsequent intervention programme is the fidelity in which the procedures can be correctly implemented in the classroom environment and the knowledge or skills that the teacher brings to this task (Kretlow, Cook, & Woods, 2011; Lane, Jolivette, Conroy, Nelson, & Benner, 2011). Eckert and Hintz (2000) and Greer, Wilson, DiStefano and Liu (2012) both argue treatment fidelity and treatment acceptability are related constructs because when teachers find screening and the related intervention procedures acceptable they are more committed to support

the implementation. As a result, greater trustworthy data and fidelity of treatment is more likely to be obtained. In addition, measuring procedural validity helps determine the ongoing training and support needs of the implementers (Ledford & Wolery, 2013).

1.10 Universal Screening – Overview of the New Zealand Situation

There are a variety of universal screening tools that have been developed over the years and used in the mental health, health, and education sectors with young children such as for anxiety/depression (Najman et al., 2008), autism (Barton, Dumont-Mathieu, & Fein, 2012) and speech/language delays (Dollghan, 2013).

There are some universal screening tools currently in use in New Zealand. For example, the New Zealand Ministry of Health (2009; 2014a) undertake universal screening for breast and cervical cancer and for mothers at 12 and 20 weeks gestation for foetal abnormalities and HIV. The Ministry of Health screens new born babies for hearing. Children also attend Well-Child Checks with their Plunket Health Professional at monthly intervals until one year of age, and then at yearly intervals until age 7 years where they are checked for height, weight, dental condition, immunisation, general behaviour and wellbeing. Plunket then refers any parental concerns to support agencies as applicable.

One of the more recent universal screening initiatives from the Health and Education Ministries is the B4 School Check (Ministry of Health, 2014b). This screening tool was introduced in 2008 with screening occurring just before the child attends school at 5 years of age. The B4 School Check assesses weight, height, dental condition, immunisation, vision and hearing. In addition to the health checks, this screening also involves a request for the early childhood teacher and Plunket health professional to complete the SDQ while parents are asked

to complete the Parental Evaluation of Developmental Status Questionnaire (PEDS) (Glascoe & Shapiro, 2004). To date, the Before School Check has not been evaluated in terms of its psychometric properties but Gauld et al. (2011) report that the B4 School Check is only moderately successful, in that, only 83% of all eligible children are being screened. Wills, Matthews, Hedley, Freer and Morris (2010) suggest the B4 School Checks under-represent the actual number of children with behaviour concerns and call for universal screening at school entry rather than before school on the grounds that this may be a more effective way to identify those children with behaviour and learning concerns.

The health field is well ahead of education in terms of universal screening although the need for screening for behaviour difficulties in schools has been documented for a number of years (Sargisson, Stanley, & de Candole, 2013). Referral of early onset antisocial development to early intervention or youth services in New Zealand is still dependent on teachers. Kamphaus et al. (2014) calls this *de facto screening*. As yet, universal screening for antisocial development does not occur in New Zealand kindergartens and schools.

1.10.1 Behavioural Screening and the School Environment. Traditionally, behaviour screening in schools has been the domain of specialists such as educational psychologists, special education teachers or advisors (Vollmer & Northup, 1996). Behaviour screening is entering its third generation. The first generation focused on the systematic direct observation, the second was the dominance of rating scale methodologies and the third generation is now involved with balancing the psychometric properties of the behavioural screening tools with usability in the school/kindergarten environment (Chafouleas, Volpe, et al., 2010).

Early attempts to treat early onset antisocial development involved teacher referral to a *wait-to-fail* special education system. The teacher had to *wait* for the student to *fail* (engage in quite extreme behaviour) before the student was referred to specialist services. This did not work well because of the lack of educational psychologists and Resource Teachers: Learning and Behaviour (RTLB) to provide effective remedial interventions for this 5% of the school population. Only the students with the most extreme behaviour received specialist services. This referral system was also not effective because teachers vary with respect to (a) their tolerance for antisocial behaviour and (b) their ability to respond effectively to defiant/antisocial behaviour in the classroom. More recently, there has been a shift from the *wait to fail* model of service delivery to a *systems/tiered* approach to support children with behavioural difficulties (Gresham, 2007a; 2007b; Sugai & Horner, 2002; 2009). Now, the expectation (and requirement) is that *all* teachers identify and then address the learning and behavioural needs of *all* students in their class. The most sensible way to do this is through a Response to Intervention Framework (RTI).

1.10.2 Response to Intervention Framework (RTI). A recent development in meeting the needs of children with behaviour and learning needs is the Response to Intervention (RTI) framework. This framework provides an all-inclusive tiered approach to identify and address students at-risk of antisocial development in the classroom and kindergartens (Sugai & Horner, 2002; 2009).

The RTI model is not a formal curriculum and consists of a three tier data-based system specifically designed to identify students who are at-risk of antisocial development or underachievement with the aim of providing an appropriate level of intervention for both

behavioural and academic concerns. This model is progressive with each tier or level of support more intensive but flexible enough to be culturally and contextually appropriate (Fallon, O'Keeffe, & Sugai, 2012). In this model, the teacher starts with academic and behaviour screening to help determine, implement and monitor the level of support required for each student. The teacher at Tier I uses classroom-wide standard proactive teaching strategies to prevent poor academic and behavioural outcomes. This tier addresses the academic and behavioural needs of approximately 80% of the student population. Selected group interventions are used at Tier II and these are for the 15% or so of students who do not respond to the Tier I strategies. Tier III strategies are for the 5% of students who do not respond to Tier II intervention with an individualised targeted intervention programme (Brown-Chidsey & Steege, 2010). The RTI model requires schools to implement proactive programmes and procedures which prevent routine misbehaviour, identify students needing Tier II and Tier III interventions, and to provide those interventions in the school setting rather than off-site.

What appears to be missing in the RTI model is a universal behavioural screening procedure. One critical component of the RTI model is accurate identification of the students who require behavioural and learning support at each tier (Menzies & Lane, 2012; Al Otaiba, Wagner, & Miller, 2014)). The multiple gating procedure is compatible with the RTI model (Walker et al., 2014) as both models use proactive screening methods. Gate 1 involves universal screening as does the first tier of the RTI model. Students who graduate to the second gate are screened using a rating scale; if they fall below (or above depending on the scales scoring) the cut-off point on the scale they then receive a group intervention. This is Tier II of the RTI model. If the data indicates the student is not responding to the Tier II intervention, then they progress to Gate 3, the direct observation (which could be a functional assessment). This is Tier

III of the RTI model. In order for teachers to detect early onset antisocial development they will need to be equipped with a reliable screening procedure and the professional development necessary for its correct use. The RTI model is currently being rolled out in some New Zealand schools but to date there is no one screening procedure advocated for use.

1.10.3 Teacher Preservice Training and Teacher Professional Development. The work of Lane, Barton-Arwood, Spencer and Kalberg (2007), Walker et al. (1997), and Webster-Stratton, Reinke, Herman and Newcomer (2011) suggest teacher training is at the core of a behavioural system change model. In order for teachers to detect early onset antisocial development, they not only require a reliable procedure for detection but professional development and learning opportunities for any screening tools correct use, but as Church (2012) and Reinke, Stormont, Herman, Puri, and Goel (2011) point out teachers do not perceive their training has prepared them to identify or address early onset antisocial development. Indeed, a vast majority of teachers are unfamiliar with this process and lack confidence in their ability to work with students at-risk of antisocial development in the absence of trained specialities. Moreover, under pressure, teachers are more likely to fall back on old methods that require the least amount of new information and skills (Scott et al., 2004). This lack of training is problematic as it impedes the introduction of evidence-based behavioural practices into schools (Conroy, Clark, Fox, & Gable, 2000). In 2012, Church made the point that no teacher preservice training programme in New Zealand included courses that taught the conditions upon which motivation, behaviour change and learning depended, and nor did these programmes provide training on FBA or mastery of the skills required to teach children who engage in persistent

antisocial behaviour. There appears to be a research-to-practice gap in our kindergartens and schools (Church, 2012; Stichter, Shellady, Sealander & Eigenberger, 2000).

One-off professional development days/sessions and years of experience are not always sufficient for teachers to learn the skills necessary to work effectively with students at-risk of antisocial development. Stichter et al. (2000) and Van Acker, Boreson, Gable, and Potterton (2005) suggest teachers need to be systematically taught the strategies and skills necessary to assess and implement intervention programmes. In addition, teachers require time to practice their newly acquired skills to an acceptable reliability standard and build capacity to support students within the RTI framework (Lane et al., 2011).

11.0 Summary

Some children arrive at kindergarten and school engaging in elevated rates of antisocial behaviour. Many labels have been used to describe these children. Observational studies of family life have identified many of the social learning processes which result in these elevated rates of antisocial behaviour and it is being increasingly recognised that these children are at risk of developing along an antisocial, rather than a prosocial trajectory. However, it is only possible to intervene effectively if these children can be identified early, preferably before the age of 8 years, as early onset antisocial development predicts a host of adverse outcomes and societal cost during adolescence and adulthood. The one place which all children attend is school so it stands to reason that screening for early onset antisocial development should occur in the school (or kindergarten) setting. In order for teachers to detect early onset antisocial development they need to be equipped with a reliable screening procedure appropriate to their context and the training/professional development necessary for its correct use. Some excellent work has gone

before with the development and trialling of a small number of psychometrically sound multiple-gating screening tools which can be used across different school levels and within the RTI framework. There is still debate, however, whether the third gate of the multiple gating procedures is necessary for the accurate identification of early onset antisocial development and whether or not teachers can be trained to undertake such a procedure during their already busy workload. If this work is not undertaken, then the long-term outcomes for students not identified early, and are left untreated, is very bleak (Dowdy et al., 2013).

The following chapter examines the literature on the multiple gating screening procedures in terms of their effectiveness and accuracy. Teacher involvement at the nomination gate, the rating scale gate, and the direct observation gate will be reviewed as will teacher training in functional behaviour assessment procedures.

CHAPTER 2: REVIEW OF THE THREE-STEP MULTIPLE GATING SCREENING PROCEDURE AND TEACHER TRAINING IN FUNCTIONAL BEHAVIOUR ASSESSMENT PROCEDURES

2.0 Introduction

This chapter reviews the research which has used the three-step multiple gating screening procedure to detect antisocial development in kindergarten and school children and the extent to which teachers have been involved in such screening. In addition the review also covers the research in which teachers have been trained to administer functional behavioural assessment procedures in the classroom.

The age/year/grade equivalence in kindergartens and schools in New Zealand and the USA is different. In New Zealand, three and four year old children attend kindergarten (also early learning centres or preschools) and attend primary (elementary) school at five years old, starting at New Entrants/Year 1. In the USA, three to five year old children attend pre-kindergarten (preschool) and start kindergarten at 5 years of age. They attend first grade at age 6 years. Grades K-12 is similar in age to Years 1-13 in New Zealand.

2.1 Multiple Gating Procedures

To seek literature regarding the use of the three-step multiple gating procedure, the following data bases were searched: EBSCO, ERIC, PychInfo, ProQuest and the Sage journal databases from the years 1980 to 2014. The search was up-dated using Google Scholar searches. The descriptor terms used included “systematic screening”, “school”, “behav*”, and “multiple gating”. A search by author names was also undertaken in the above databases but found no additional studies. An ancestor search of the reference lists of relevant reports found four additional studies.

Studies were included in the review if they met the following criteria:

1. Teachers had nominated children in their class who met one of several definitions of "children with behaviour problems".
2. At Gate 2, teachers had completed a rating scale for some or all of their nominated children.
3. It was clear from the report whether or not direct observations of the children nominated at Gate 2 had been undertaken.
4. The number of children nominated, rated and observed was reported for all three gates.
5. Only those studies which reported predictive, concurrent and/or discriminative validity at Gate 3 were included.

This literature search identified 41 published studies where the authors used a multiple gating screening procedure to identify children with clinical levels of antisocial behaviour. In all studies the general classroom teacher successfully implemented the first two gates of the multiple gating procedures. Of these, 12 studies used a three gate procedure but only six of these studies reported predictive, concurrent or discriminative validity. These six studies are reported in Table 3. Six other studies used a three gate procedure but either did not fully report their procedures, did not report the number of children identified at each of the three gates, or did not report predictive, concurrent or discriminative validity. These are reported in Appendix 2. The remaining 29 studies used a two gate multiple gating procedure. These are reported in Appendix 1.

Multiple gating procedures are increasingly being used to identify children who require Response to Intervention tier 2 or 3 interventions, such as the *Prevent, Beacons, First Step to Success* and *Check Connect and Expect* programmes as can be seen in Appendices 1 and 2.

As described in Table 3, the six studies reported that teachers completed Gates 1 and 2 and researchers completed Gate 3. These six studies are now described.

Table 3: *Examples of Studies Consisting of Multiple Gating Behavioural Screening Procedures Undertaken in Schools or Early Childhood Centres which Meet all Five Requirements of the Literature Search Criteria*

	Participants	Gate 1	Gate 2	Gate 3	
Author/date	Grade Level Total Number (or number of sites)	Undertaken by Procedure Used Nomination Criteria Total Nominations	Undertaken by Rating Scales Used Total Meeting Criteria	Undertaken by Observation Procedure Total Number Meeting Criteria	Concurrent Validity Interrater Agreement Discriminative Validity Predictive Validity
Feil & Becker (1993)	Preschool No: Fall = 121 children No: Spring = 105 children N = 17 teachers	Teachers SSBD (mod)-PSBP nomination form Top 5 externalising Top 5 internalising N = 99 externalising N= 99 internalising	Teachers/Assistants CEI Part A & B ABS, MBS, BPBQ, CTRS Top 5 externalising Top 5 internalising N = 99 chn	Researchers SAET - classroom PSB - playground 10 min X 2 classroom 10 min X 2 playground *N = Externalising* Fall = 9, Spring = 9 *N = Internalising* Fall = 9, Spring = 8 N = Controls: Fall =41, Spring = 28	Gate 2: CV with BPBQ & CTRS between .25 to .84 Gate 3: IOA: SAET = 97%; PBS = 87% PV = False-positive Externalising = 3% Internalising = 0% False-negative Externalising = 10% Internalising = 3%
Feil, Walker, & Severson (1995)	Preschool & Kgtn N = 2,853 children N = teachers not reported	Teachers ESP nomination form Top 5 externalising Top 5 internalising N = 1,401	Teachers CEI– Aggressive BS ABS, MBS BPBQ, CTRS, ASEBA-TRF Top 3 externalising Top 3 internalising N = 541 N = control chn not	Researchers PSB 10 min X 2 classroom 10 min X 2 playground	Gate 2: CV with BPBQ, CTRS & TRF = .18 to .89 Gate 3: IOA = 87% CV = Aggressive BS, ABS, MBS range = .19 - .89

			described		
Walker & Severson (1992b) Trial Testing	Grades 1-5 N = 454 children N = 18 teachers	Teachers SSBD nomination form 10 externalising 10 internalising N= 168 externalising N= 132 internalising	Teachers CEI, CFI, CBCL Top 3 externalising Top 3 internalising 2 controls from each class N = 54 externalising N= 54 internalising N= 33 controls	Researchers AET, PSB 15 min X 2 classroom 15 min X 2 playground Total = 64 N = 16 externalising N = 15 internalising N = 33 controls	*Gate 1:* Test-retest = .74 *Gate 2*: CV with CBCL Externalising scale at rating times 1 & 2 = -.63 & -.68 (p<.001) Internalising not undertaken *Gate 3:* IOA with CBCL: AET = .96, PBS = .85 CV with CBCL: AET = -.42 (p<.01) NSI = .29 (p<.05) PSI = -.35 (p<.03) Internalising = no significance DV: From assigned status of externalising, internalising, control at Gate 1, Gate 2 & 3 correctly classified = 89%
Walker, Severson, Nicholson, Kehle, Jenson, & Clark (1994)	Grades 1-5 N = 1,468 children N = 58 teachers	Teachers SSBD nomination form 10 externalising 10 internalising N = 173 externalising	Teachers CEI, CFI Top 3 externalising Top 3 internalising 1 boy / 1 girl control from each class Total = 475	Researchers AET, PSB Top 1 externalising Top 1 internalising 1 boy / 1 girl control 15 min X 2 classroom 15 min X 2	Gate 2: CV not reported Gate 3: IOA: classroom = 95% Playground = 88% DV: From assigned status of externalising,

		N = 174 internalising	N = 173 externalising N = 174 internalising N = 128 controls	playground Total = 225 N = 56 externalising N = 53 internalising N = 115 controls	internalising, control at Gate 1; Gate 2 & 3 correctly classified = 84% (externalising = 86% internalising = 64%, control= 93%)
Walker, Severson, Stiller, Williams, Haring, Shinn, & Todis (1988)	Grades 1-5 N = 454 children N =18 teachers	Teachers SSBD nomination form 10 externalising 10 internalising Rank 1: Externalising N = 54 & 54 Rank 2: Internalising N = 54 & 54	Teachers CEI, CFI, CBCL Top 3 externalising Top 3 internalising N = 51 externalising N = 51 internalising N = 33 controls (2 chn from each class)	Researchers AET, PSB Top ranked 15 mins X 2 classroom 15 mins X 2 playground N = 16 externalising (consented) N = 15 internalising (consented) N = 33 controls	Gate 2: CV with CBCL: ABS = -.63 to -.68 (p<.001) MBS = .81 to .77 (p<.001) Internalising = not undertaken IOA: AET = .96, PSB = .84 CV with CBCL: AET = -.42 (p<.01) NSI = .29 (p<.05) PSI = -.35 (p<.03) Internalising = no significance DV: From assigned status of externalising, internalising, control at Gate 1, Gate 2 & 3 correctly classified = 89%

Walker, Severson, Todis, Block-Pedego, Williams, Haring, & Barckley (1990) Reporting Study 1 of 2 Study 2 covered Gates 1 & 2 only.	Grades 1-5 N = 15 primary schools N = 158 teachers	Teachers SSBD nomination form 10 externalising 10 internalising N = 315externalising N = 306 internalising	Teachers CEI, CFI, SARS Top 3 externalising Top 3 internalising 2 controls from each class N = 315 externalising N= 306 internalising N = 235 controls	Researchers 8/15 schools AET, PSB 15 min X 2 classroom 15 min X 2 playground N = 70 externalising N = 75 internalising N = 153 controls	Gate 2: CV not reported IOA: not reported DV: From assigned status of externalising, internalising, control at Gate 1; Gate 2 & 3 correctly classified = 85% (externalising = 81% internalising = 68%, Control = 95%)

Note: ABS =Adaptive Behavior Scale, AET = Academic Engaged Time, Aggressive BS = Aggressive Behavior Scale, ASEBA-TRF = Achenbach System of Empirically Based Assessment-Teacher Report Form, BPBQ = Behar Preschool Behavior Questionnaire, CBCL = Child Behavior Checklist, CEI = Critical Events Index, CFI = Adaptive Behavior Scale & Maladaptive Behavior Scale, Chn = Children, CTRS = Conner's Teacher Rating Scale, CV = Concurrent validity, DV = Discriminative validity, ESP = Early Screening Project, IOA = Interrater agreement, Kgtn = Kindergarten, MBS = Maladaptive Behavior Scale, Mins = Minutes, N = Number, NSI = Negative Social Interaction, PBS = Peer Social Behavior, PSBP =Preschool Screening for Behavior Problems, PSI = Positive Social Interaction, PV = Predictive validity SAET = Structured Academic Engaged Time, SARS = School Archival Record Search, SSBD = Systematic Screening for Behavior Disorders.

2.1.2 Participants. Over 5,000 students participated in five of the reported studies with Walker et al. (1990) reporting 15 schools participated in their study but they did not provide numbers for each school. The students were from preschools (Feil & Becker, 1993), preschool and kindergarten (Feil et al., 1995) and grades 1 to 5 (Walker & Severson, 1992b; Walker et al., 1994; Walker et al., 1988; Walker et al., 1990).

Nominated students. Participating in the six studies were 3,083 nominated students. The students were from preschools, preschools and kindergartens and grades 1-5.

Control students. Selection and reporting of control students from each of the six studies varied. Feil and Becker (1993) reported 69 control students but they did not describe their selection process. Likewise, Feil et al. (1995) reported control students but did not describe their selection or the number at each of the gates. Walker et al. (1994) and Walker et al. (1990) described their Gate 2 control students as one girl and one boy from each of the participating classrooms who were not ranked on the teacher's externalising or the internalising behaviour lists. Walker and Severson (1992b) and Walker et al. (1988) used the same method and used two students as their controls from each class but they did not report specific gender.

Teachers. Overall, 269 teachers were involved in the Feil & Becker (1993), Walker and Severson (1992b), Walker et al. (1994), Walker et al. (1988) and Walker et al. (1990) studies. Feil et al. (1995) did not report the number of teachers participating in their study.

2.1.3 Multiple Gating Procedures Used. Of the six studies, four used the SSBD. The downward version of the SSBD, the ESP was used by Feil et al. (1995) and the forerunner to the ESP, the Preschool Screening for Behavior Problems (PSBP) was used by Feil and Becker (1993).

Gate 1: Nomination procedures. Gate 1 nomination procedures followed the same process for all six studies. Teachers used behavioural descriptions of externalising and internalising behaviours to nominate and then rank 10 (or 5 in the case of the ESP) students in their class who were *most like* or *least like* the description. The three highest ranked externalising and internalising students from each list then proceeded to Gate 2 except in the Feil and Becker (1993) study who proceeded to Gate 2 with five top ranked students.

Gate 2: Rating Scales. All six studies clearly described the measures they used at Gate 2. Feil and Becker (1993) used a modified version of the SSBD while Feil et al. (1995) used the ESP. Both studies used additional measures. Feil and Becker (1993) used the Behar Preschool Behavior Questionnaire (BPBQ) (Behar & Stringfield, 1974) and the Conners Teacher Rating Scale (CTRS) (Conners, 1989). The Teacher Report Form (TRF) (Achenbach & Rescorla, 2001) was an additional measure for Feil et al. (1995).

In keeping with SSBD procedures, Walker et al. (1994) just used the Critical Events Index (CEI) and the Combined Frequency Index (CFI) consisting of the Adaptive Behaviour Scale (ABS) and the Maladaptive Behaviour Scale (MBS) but Walker and Severson (1992b) and Walker et al. (1988) supplemented these measures with the Child Behavior Checklist (CBCL) (Achenbach & Edelbrock, 1979) while Walker et al. (1990) used the School Archival Record Search (SARS) as their additional measure.

Gate 3: Direct Observations. Walker and Severson (1992b), Walker et al. (1994), Walker et al. (1998) and Walker et al. (1990) all followed the SSBD Gate 3 direct observation procedure of two 15-minute direct observations during a structured class activity, recording *academic Engaged Time* (AET) on the observation form, and another two 15 minute observations in the playground at recess recording social behaviour. The two preschool and kindergarten studies

(Feil & Becker, 1993; Feil et al. 1995) both used a modified version of the SSBD direct observation procedure where they undertook two 10 minute observations in the classroom and two 10 minute observations in the playground using the *peer social behaviour* (PSB) recording form. Although Feil and Becker (1993) trialled a *structured activity engaged time* (SAET) observation for the preschool group, this was not replicated in later versions of the ESP screening tool.

2.1.4 Psychometric Properties of the Multiple Gating Systems. The SSBD has been standardised on a national representative sample of 4,500 primary (elementary) school cases for Gate 2 and 1,300 cases for Gate 3. The psychometric qualities of the SSBD have been demonstrated through measures of internal consistency and reliability *(r* = .82-.88) and test-retest reliability (*r* = .74-.90). Internal consistency for the Gate 2 ABS and MBS subscales was estimated above .80 and high levels of constructive validity have shown the SSBD to be an effective indicator of the development of at-risk behavioural difficulties. Coefficient alphas for the SSBD scales were greater than .90 on the standardised sample (Walker et al., 1990; Walker et al., 1994). Walker et al. (1988) report concurrent validity for the ABS with the CBCL externalising scale at rating times 1 and 2 at Gate 2 was -.63 and -.68 ($p < .001$). For the MBS, the correlations were .81 and .77 ($p < .001$). The observational measures at Gate 3 also correlated with the CBCL externalising scale. This included academic engaged time; -.42 ($p < .01$), negative social interaction; .29 ($p < .05$), and positive social interaction -.35 ($p < .03$). None of the Gate 3 measures correlated with the CBCL internalising scale. From the assigned groupings of externalising, internalising or control at Gate 1, 89% of the 454 students by Gates 2 and 3 were correctly identified as at-risk of antisocial development, although the number per

group were not reported. Similarly, Walker et al. (1990) in their study covering 15 primary schools (number of students not included) found that from their Gate 1 nominations of externalising, internalising and control students, 85% of their students were correctly identified at Gates 2 and 3 as at-risk of antisocial development. This included 81% externalising, 68% internalising and 95% control students.

These results are noteworthy as in the trial testing of the SSBD, Walker and Severson (1992b) achieved only modest levels of predictive validity in their sample of 155 children. At Gate 1, 69% eternalising and 52% internalising nominated students were included in the top ranked three children at the one year follow-up. At Gate 2, concurrent validity with the CBCL at the first and second rankings was -.63 and -.68 respectively. The three Gate 3 observational measures correlated significantly with the CBCL externalising and internalising scales. These were academic engaged time; -.42 ($p < .01$), negative social interaction: .29 ($p < .05$), and positive social interaction; -.35 ($p < .03$). Improved discriminative validity was obtained by Walker et al. (1994) when, from 1,468 students, 86% externalising, 64% internalising and 93% of the control students were correctly identified as at-risk.

The psychometric properties of the ESP have also been reported (Feil & Becker, 1993; Feil et al., 1995). The precursor to the ESP shows high levels of sensitivity and specificity with regard to predictive validity with Feil and Becker (1993) reporting their sample of 121 preschoolers a false-positive error rate for externalising behaviour of 3% and for internalising behaviours zero. Their false-negative error rate for externalising behaviours was 10% while the internalising false-negative rate was 3%. At Gate 2, concurrent validity with the PBQ and CTRS measures ranged from .25 to .84. Feil et al. (1995) standardised the ESP on a national representative sample of 2,853 children aged from 3 to 6 years, including a proportionately

representative sample of Head Start families. They reported a false-positive error rate of 4% and a false-negative error rate of 9%. At Gate 1, Kappa coefficients between the teacher and assistant teacher in each classroom were .70 and .48 for externalising and internalising behaviours respectively. Concurrent validity was found with the PBQ, CTRS and the TRF with correlations ranging from .18 to .89. Item-total correlations could not be achieved with Gate 3 measures because of the low number of observations.

2.2 Summary of the Multiple Gating Procedures

At this point in time, the SSBD is the only behavioural screening tool to identify students from Grades 1 – 5 with either internalising or externalising behaviours and work is continuing to extend this to middle and high school levels. There are, however, two main limitations to the SSBD. First, only six students, that is, three externalising and three internalising behaviours can pass through to Gate 2. If the children who are nominated (as meeting the behavioural definition) do not proceed to Gate 2 then they are missing the opportunity for an accurate and timely diagnostic assessment and may never receive the intervention assistance they require to halt their antisocial development. Second, the SSBD does not include procedures to identify comorbidity, that is, to detect students who may present with both externalising and internalising behaviour difficulties. These students may also miss the opportunity to receive assessment and intervention services appropriate to their needs.

2.3 The Question Surrounding Gate 3 Measurement

The question has been raised by Cheney and associates (Caldarella et al., 2008; Cheney et al., 2009; Tsai & Cheney, 2012; B. Walker et al., 2005; Young et al., 2012) whether the third

gate is necessary? This question is important as there appears to be no data to answer this question. The question is an important one because the third gate observations could serve to both confirm a diagnosis of antisocial development and to serve as a functional assessment phase. That is, the third gate, (the direct observations) could be used to identify the antecedent and consequent conditions operating to motivate continued use of antisocial behaviour in the classroom. This information is required for any intervention plan to be effective.

2.4 Behavioural Assessment, Teacher Training and Implementation

The assessment of school children who engage in persistent antisocial and non-compliant behaviour in the classroom has traditionally been undertaken by educational psychologists and, in New Zealand, by the specially trained Resource Teacher: Learning and Behaviour (RTLB). But, the development of multiple gating screening procedures, functional behavioural assessment and the implementation of the RTI framework of remedial assistance all imply a greater role for teachers in diagnostic assessment and adaptive teaching.

It must be asked, therefore, how teachers are responding to these new role demands and how much in-service training is required before teachers can take on these new roles? To address this question the published functional assessment literature was reviewed to identify implementation studies in which teachers perform significant functional assessment tasks.

The following data bases were searched: EBSCO, ERIC, PychInfo, ProQuest and the Sage journal databases from the years 1995 to 2014. The search was up-dated using Google Scholar searches. The descriptor terms used included “teachers”, “behav* screening”, “school”, and “function* behav* assessment”. A search by author names was also undertaken in the above

databases but found no additional studies. An ancestor search of the reference lists of relevant reports found three additional studies.

Studies were included in the review if they met the following criteria:

1. Functional assessment training was provided to teachers (or other adults) working with students in a preschool or classroom setting.
2. The strategies used in the training programme were clearly identified.
3. The time the training took was reported.
4. The procedural integrity and/or results of the training programme were reported.

This search identified 16 published studies where the authors trained teachers, special education teachers, paraprofessionals and other professionals working in schools or preschools to undertake functional behavioural assessment (FBA). These studies are summarised in Table 4. These studies extend over a 15 year period but since 2009 only six studies have been undertaken. As can be seen from Table 4, 11 of the published studies involved teachers who were learning to implement FBA skills and/or implement the resulting behavioural intervention plan in their classroom.

Table 4: *Examples of Studies which Show the Training of Teachers in Functional Behavioural Assessment (FBA) Procedures*

Author	Training	Teacher Number	Trained by & Setting	Training Procedure	Training Time	Procedural Integrity	Results
Bessette & Wills (2007)	FBA and intervention	1 para-professional	Authors 1-1 Classroom	Pre-training test = 20 questions Post-training test = 20 questions Study Guides x 3 based on attention, escape & play contingencies with examples Coaching 3 contingencies per day Study guide test x 3 = 10 questions	8 min. 8 min. Contingency coaching = 3 x 10 minutes sessions daily No Sessions: Attention = 5 Escape = 8 Play = 7	Condition: Attention = 92% Escape = 95% Play = 100**%**	% correct Pre test = 45% Post test = 90%
			1-1		10 minutes to review data to determine function		Study guide tests x 3 = 100%
Bloom, Lambert, Dayton, & Samaha (2013)	Trial-based FBA	3 teachers	Authors 1-1 Preschool	Overview of FA & trial-based FBA. Taught attention, demand, tangible, ignore conditions. Data collection and steps. Analysis 10 X 2 minute trial-based FBA	1 teacher = 90 minutes 2 teachers = 45 minutes	96% for both teachers	Teachers could detect own errors
			1-1 Classroom	Intervention			
Borgmeier, Loman, Hara & Rodriguez (2014)	FBA for Behaviour Support Plans	General teachers = 57 Special ed.	Authors Over 3 settings:	Basic FBA Modelling Guided practice	60 minutes	Items correct All participants: Pre-test = 56% Post-test = 86% *By role:*	

		Teachers = 31 Psychologist = 22 Counsellors = 37 Admin = 22 Behaviour specialists = 22 Graduate students = 67 Other = 34	Conference, workshop or university classes for graduate students	Feedback Questions Vignettes of escape & attention maintained behaviours	Knowledge test: Pre-10 min. Post- 5 -10 min.	General teachers 51% - 83% Special ed. Teachers 56% - 85% School Psychologists 59% - 87% Counsellors 54% - 85% Administrators 59% - 86% Behaviour specialists 65% - 91% Graduate students 58% - 86% Other 53% - 87%
Chandler, Dahlquist, Repp, & Feltz (1999)	FBA & intervention	11 teachers 15 para-professionals	Behaviour specialists Workshops Preschool 1-1	Lectures, discussion groups, analysis of video, FBA written case studies In class coaching Week 1: Conditions information, intervention strategies via coaching modelling, feedback Week 2: Implementation, coaching only for 1 class Week 3: Coaching for ½ day Week 4: Collaborative support. No class support but coach attended planning meetings	8 x 2 hours Coaching faded over 4 week period Faded collaborative support over 4 months	FBA training effects not undertaken. Anecdotally, authors report intervention success may be related to training model but not possible to identify specific training component

Erbas, Tekin-Iftar, & Yucesoy (2006)	FBA	5 Special ed. teachers, 1 preservice teacher	Authors Group work Classroom	*Phase 1:* Readings on theory, practical information on FBA, lecture on FBA methodology, 2 videos of correct implementation of each test condition, 20 item quiz with 90 criteria to go to next phase *Phase 2*:		Correct procedures Baseline: Group mean = 5% (*range* = 0-7%). Instruction: group mean = 90% (*range*=81-96%). Follow-up= 100% (*range*=99-100%)
				(a) 2 X individual consultation meetings – define behaviours and interviews with parents, problems discussed. (b) target behaviour videoed, direct observations, video used to identify behaviour function, hypotheses made. (c) conduct FBA - test conditions: attention, demand, play, tangible with feedback	15-30 minutes 10-15 minutes	Conditions: Escape = 81% Tangible = 89% Play = 81% Attention = 96%
Lane, Weisenbach, Little, Phillips, & Wehby (2006)	FBA & intervention	2 teachers with 1 student each	First author Whole school PD workshop	Principles of ABA, how to implement a FBA Analysed FBA data Selected intervention strategies Assisted with intervention design Trained students Implemented intervention	6 hours	
			Classroom 1-1 Project Liaison	FBA matrix coaching FA process –function matrix, Decision model – designing intervention, data collection, application of reinforcement contingencies, treatment fidelity	1 hour per week No. of weeks not reported	Teacher 1 Teacher = 100% Liaison = 83% Teacher 2 Teacher = 100% Liaison = 100%

Lane, Weisenbach, Phillips, & Wehby (2007)	FBA and intervention	Grade 1 & 2 teachers with 1 student each	First author Whole school PD Workshop	Principles of ABA, how to design, implement & evaluate FB interventions, how to use function matrix & FB decision model, design intervention, data collection, checklist, implement intervention	6 hours	
			Classroom 1-1 Project liaison	Reinforce & re-teach procedures from initial training; interviews, ABC observation & data collection	1 hour weekly	
			Classroom 1-1	Prior to implementation – target & replacement behaviours explained to participants. Then taught intervention skills with modelling, guided practice, independent practice	1 hour weekly	Grade 1 Teacher = 100% Liaison person = 93% Grade 2 Teacher = 100% Liaison person = 100%
Lerman, Hovanetz, Strobel, & Tetreault (2009)	FBA Narrative & descriptive ABC observations *Simulated only*	13 special education teachers 3 para-professionals	Authors Group School library and unused classrooms	Lecture on function of behaviour & ABC data collection, operational definitions, examples of narrative and structured ABC forms View 15 min. video and record/score function of behaviour –attention, demand, tangible conditions Design 8 = narrative video group 8= structured video group Reversed order video groups	60 minutes 15 min. video	Scored against *expert /authors* recordings. Non-occurrence: Structured & Narrative format = 92% Antecedent & Consequence Structured format = 69% Narrative format = 60% Antecedent & Consequence problem behaviour: Group mean = 32% Structured format= 22% Narrative format = 22%

Loman & Horner (2013)	Basic FBA	7 school counsellors, 2 principals, 2 learning specialists, 1 vice-principal	First Author Group	Basic FBA knowledge test. ABC observations, Basic FBA with practice opportunities and verbal feedback & checks for understanding, worksheets, written feedback, practice	20 minutes 4 X 1 hour sessions	100%	Knowledge test Pre-test: group *mean* = 40% (*SD* = 18.82; *range* 11-69) Post-test *mean* = 92% (*SD* = 7.22, *range* = 77-100) on 8 of 9 items
				Tasks	*Mean* = 2 hours		
		10	Classroom 1-1	FBA with student Staff interviews -FACTS Direct observations - ABC			
		10	Classroom 1-1	FBA conditions: control, attention, escape	Each condition = 10 x 30 sec trials	100%	Average time = 2 hours for full FBA (*range* = 65 – 275 minutes)
Maag & Larson (2004)	FBA & implement	1 teacher	Author 1-1 Classroom	Two sessions Session 1: information & practice on principles & rationale of FBA, FBA procedures, developing & testing hypotheses using FAHFP, Criteria for correct implementation not reported Session 2: Discussed practice, reviewing issues with data collection	5 ½ hours	Anecdotally reported as high	No data relating to teacher training taken. Both students reduced target behaviour to zero but teacher had difficulty remembering to take daily data
Moore et al. (2002)	FBA	3 teachers	Authors Group Workshop	Phase 1: Written and verbal information on conditions Test Simulated FA: 4 attention & 4 demand conditions No feedback	1 day to read protocols 5 minutes & videoed		Initial training test = 100% all teachers

				Phase 2: Rehearsal, modelling, performance, feedback on conditions. Simulated FA with role play and practice, feedback provided			Graphed but not specifically reported All teachers = 94% correct responding
			1-1	In class probes only: performance feedback on attention and demand conditions		Anecdotally reported as high	All teachers correct responding exceeded 95%
Pence, St. Peter, & Giles (2014)	FBA	6 special education teachers *Trainers:* BCBA trained, not certified	Behaviour Analyst Group	*Pyramidal training* Didactic instruction, role play, feedback, practice. No mastery criteria but immediate verbal feedback (corrective & praise) used until FBA implementation was correct	Not reported		
	FBA refresher Workshop		Authors Group	Revision of data collection, training procedures, how to give feedback & take baseline. Practice opportunities	90 minutes		
	FBA	6 special education teachers – trainees. All enrolled in BCBA courses	6 *Trainers* 1-1 Classroom	Step-by-step instruction on each FBA attention; escape, play, tangible conditions. Praise for correct implementation, errors described, given appropriate response, step modelled & role played to 90% fidelity before next condition started Readings on FBA	1.5 to 2 hours	Mastery criteria set 90% fidelity across all 4 conditions Baseline: All trainees low to moderate levels Post training: 3 teachers over 90% in 3 conditions, 1 teacher only did tangible = over 90% 3 teachers decreased to 70-89% over 8 sessions but brief corrective feedback maintained mastery level	

Renshaw, Christensen, Marchant, & Anderson (2008)	Function-based Support and implement behaviour support plan	4 teachers	Authors Group Independent Classroom 1-1	Phase 1: Training based on Umbreit et al. (2007 text). Conducting FBA & develop behaviour support plan 10 readings, Pre-post test of: 10 applied activities - 100% mastery of activity material required progress to next activity. If incorrect, feedback, correction and resubmission until correct. FB support knowledge test on rationale, principles & procedures of FB support. 30 multiple choice items Consultation meetings Implement behaviour support plan	4 x 1 hour sessions over 10 weeks Applied activities = 1 per week X 2	FB Support Knowledge Test Group mean: baseline = 63% post-test = 94% Developing behaviour support plan Group Range = 64% - 85% correct. Teacher & Observer = 100%	Group mean = 89% procedures correct
Scott, McIntyre, Liaupsin, Nelson, Conroy, & Payne (2005)	FBA	5 facilitator teachers from 4 schools	First author Group	*Pyramidal training* 30 min. overview FBA FBA procedures plus developing function based interventions Guided practice/feedback on 2 video case studies Independent group practice with 3rd video case study Trainer evaluation	6 hours	Each teacher able to provide antecedent, instructional strategies, positive & negative consequences using Scott, Liaupsin, & Nelson (2001) training module criteria	
	FBA & intervention strategies	31 student cases *Teams*	4 facilitators & teachers	Facilitator lead team through 5 questions & discussion /analysis of each student case	Not reported	Experts selected more instructional strategies & less negative consequences than teams. Teams	

		determined by who worked closest to student. Number on each team not reported	Assisted by behaviour specialist and authors Group	Answered pre-set FBA questions on function and suggested intervention strategies Results compared to expert group comprised of 3rd, 4th & 5th authors		selected 70% exclusionary strategies vs nil from experts. Teams did not use function of behaviour to inform intervention strategies. Teams & facilitator at acquisition not fluency stage of FBA skill. More structured training in function & replacement behaviour required	
Skinner, Veerkamp, Kamps, & Andra (2009)	FBA and intervention	1 teacher	Authors 1-1	Adapted from Iwata et al. (2000) & Moore et al. (2002). FBA training: 1- how to implement contingencies attention, escape, & control condition Test 1 & 2 = 25 items	Training 1 = 2 x 33 min + 10 minutes to role play contingencies Training 2 = 15 minutes	FBA: 1 Teacher attention = 92%, Peer attention = 97%, Escape = 97%, Control = 100%, FBA 2: 97% to 100%	Test 1 = 92% Test 2 = 100%
			Classroom	Intervention Training = Fixed time reinforcement components & role play	1 x 20 min.	Intervention = 100%	
Wallace, Doney, Mintz-Resudek, & Tarbox (2004)	FBA	2 teachers 1 psychologist	Authors Workshop with 35 other attendees	Simulated analyses for baseline: attention, demand, toy-play conditions Description/purpose presentation of each condition, video demonstration of each condition, role play, questions. Simulated analysis as per baseline. Verbal feedback introduced if failed 90% fidelity, then	5 minutes 3 hours	Baseline: No participant scored above 50% Post training Participant 1: attention = 100% play & demand = 96% Participant 2: attention, demand, play = 100% Participant 3: Met criterion for attention, play but not demand	

		simulated sessions conducted again		(65%), with error correction & feedback = 96%
	1-1 Classroom	Generalised probe: Participant 3 only, 12 weeks after training	5 minutes	Probe participant 3: all conditions = 100%

Note: ABA = Applied Behaviour Analysis, Basic FBA = Basic Function-Based Assessment to Behaviour Support Plans: Trainer's Manual (Loman, Strickland-Cohen, Borgmeier, & Horner, 2011), BCBA = Behavior Analyst Certification Board, FA = Functional Assessment, FACTS = Functional Assessment Checklist for Teachers and Staff, FAHFP =Functional Assessment Hypotheses Formulation Protocol (Larson & Maag, 1998) FB = Function-based, FBA = Functional Behavioural Assessment, PD = Professional Development.

2.4.1 Participants. The 16 studies produced 257 participants. There were 76 general classroom teachers, 49 special education teachers, and 18 paraprofessionals. In addition, there were 37 counsellors, 22 psychologists, 21 behaviour specialists and 34 people labelled as "other". All participants were from primary schools with the exception of the studies by Chandler et al. (1999) and Bloom, Lambert, Dayton and Samaha (2013); in these studies preschool teachers were trained. Gender, age and length of teaching experience were not reported in most of the published studies but when reported teaching experience ranged from 1 to 36 years (Bessette & Wills, 2007; Lane, Weisenbach, Phillips, & Wehby, 2007; Lermon, Hovantz, Stobel, & Tetreault, 2009; Loman & Horner, 2013; Pence et al., 2014; Renshaw, Christensen, Marchant, & Anderson, 2008). There appeared to be no difference in the acquisition and retention of FBA knowledge and skills between the different participant groups.

2.4.2 Functional Behavioural Assessment (FBA) Training Content. The content of the FBA training programmes was similar over the 16 published studies. Training predominantly involved an overview of FBA, practical information on FBA and then examples and analysis of the attention, escape, play and/or tangible conditions. Video was used to support teaching the FBA conditions (Chandler et al., 1999; Erbas, Tekin-Ifar, & Yucesoy, 2006; Lerman et al., 2009; Moore et al., 2002; Scott et al., 2005; Wallace Doney, Mintz-Resudek, & Tarbox, 2004). Typically, videos contained simulated examples of conditions and then participants were requested to analyse the function of behaviour as part of their training. In addition, video showed the correct implementation of each of the conditions in the naturalistic environment. Study guides (Bessette & Wills, 2007; Loman & Horner, 2013), vignettes of escape and attention conditions (Borgmeier, Loman, Hara, & Rodriguez, 2014), written case studies (Chandler et al, 1999), and pre-and-post training knowledge tests (Bessette & Wills, 2007: Borgmeier et al.,

2014; Erbas et al., 2006; Loman & Horner, 2013; Renshaw et al., 2008; Skinner, Veerkamp, Kamps, & Andra, 2009) supplemented the training process.

In each of these studies, 1-1 coaching and mentoring from the authors and /or behavioural specialists occurred for both the FBA training and during the implementation of the resulting behaviour plan in the classroom. Additional training techniques included behavioural vignettes with guided practice (Borgmeier et al., 2014), video examples with guided practice (Lerman et al., 2009; Scott et al., 2005; Wallace et al., 2004) and a graduate student playing the role of the target student in four demand and four attention simulated conditions was used by Moore et al., (2002). Group training preceded 1-1 FBA classroom training in eight studies. Four of these studies provided group FBA training and then extended this training to include identification of intervention strategies and implementation of the resulting behaviour plan in the participating teacher's classroom (Chandler et al., 1999; Erbas et al., 2006; Loman & Horner, 2013; Renshaw et al., 2008). Similarly, Lane et al. (2006) and Lane, Weisenbach et al. (2007) followed this same method but training was part of whole-school professional development provided over six hours. In contrast, Pence et al. (2014) and Scott et al. (2005) used the pyramidal training method where previously trained teachers taught other teachers (trainees) to conduct FBA. The trainers and the trainees then used their FBA training 1-1 in the classroom.

Borgmeier et al. (2014), Lerman et al. (2009) and Scott et al. (2005) showed that some of their teachers had difficulty learning and applying FBA skills in group workshop situations. The Chandler et al. (1999) and Maag and Larson (2004) studies provided only anecdotal information regarding the effectiveness of their teacher training procedures.

Participants' previous experience of FBA was not reported in half of the published studies in this review, however, Bessette and Wills (2007), Bloom et al. (2013), Moore et al. (2002),

Skinner et al. (2009), and Wallace et al. (2004) reported their participants had no prior experience in FBA while the participants in the Loman and Horner (2013), Borgmeier et al. (2014), and Lermon et al. (2009) studies did. Pence et al. (2014) was the only study where all the participants were either Board Certified Behavior Analyst (BCBA) trained or in BCBA training. From these studies, the findings suggest that across participants with varying levels of previous training, there was a comparable level of post training performance despite initial variability in skill level.

All the published studies used similar training content. They emphasised the *how* of FBA with role plays, feedback (praise and corrective) and practice provided on examples of the attention, demand, and/or tangible and/or play conditions. Only Bessette and Wills (2007) and Loman and Horner (2013) used study guides. Pre-post training knowledge tests were used in six studies (Bessette &Wills, 2007; Borgmeier et al., 2014; Erbas et al., 2006; Loman & Horner, 2013; Renshaw et al., 2008; Skinner et al, 2009). Where interventions were to be implemented, additional training was provided in identifying and then implementing intervention strategies in the classroom. At these times the trainer provided considerable mentoring and feedback to the teacher on these strategies in the classroom environment.

Training time varied over the 16 studies. For four studies training ranged from 60 to 90 minutes. For one study training took 2.5 to 3 hours and for seven studies training lasted 6 to 8 hours. The two longest training programmes were 16 hours (Chandler et al., 1999) and 40 hours (Renshaw et al., 2008) with both these studies providing considerable coaching and mentoring skills to the teachers during the implementation of the resulting intervention plan. Training for both Erbas et al (2006) and Moore et al. (2002) involved reading materials with only Moore et al. reporting it took one day to do this task.

In summary, FBA technology has advanced considerably over the past 15 years and the findings of the 16 evaluations suggest that teachers, paraprofessionals and other school professionals can, with a reasonable degree of proficiency undertake FBA. However, this is at a cost. The cost of this success has been a high level of researcher input during the coaching and mentoring required to bring teachers to the point where they can implement these procedures in their classrooms.

2.5 Conclusion

At the present time, there is a lack of standardised procedures for the identification and assessment of students at-risk of antisocial development suitable for use in New Zealand. Without a standardised identification and screening procedure, it is not possible to identify accurately the students who consistently engage in persistent antisocial behaviour and who should be receiving assistance. It is, therefore, not possible to identify the specific missing social skills which should be the focus of prevention and intervention. The lack of standardised procedures also prevents teachers identifying the increasing number of students who are developing along an antisocial pathway, or measuring the cost effectiveness of the services which are currently being provided at each age level.

Schools and teachers face a number of problems when working with students who are at-risk of antisocial development. One way to identify and screen these students is through a multiple gating system where teacher nominations are used at the first gate, ratings scales at the second gate and a direct observation at the third gate. While this process is still in its infancy in New Zealand, evidence-based research suggests that the multiple gating procedures are most effective in identifying and assessing children/youth who are at-risk of antisocial development in

the general school population. The multiple gating procedures have been standardised and used extensively in the USA but it has only recently been piloted in New Zealand (see Church et al., 2006; Tyler-Merrick & Church, 2012).

At this point in time, there is very little research available about training teachers to use behavioural screening procedures in their classrooms. From the 16 published studies sourced, the evidence suggests new or experienced teachers do not have an understanding of the contingencies which maintain antisocial and social behaviour, nor do they have knowledge of FBA procedures/technology, nor can they develop or implement a function-based behaviour plan without coaching and mentoring from an experienced researcher or behavioural analyst. With training, however, these teachers quickly learned to implement these skills with a high level of procedural integrity. The question then arises, how can all teachers have access to this form of training so that they can acquire the skills of behaviour screening and assessment? Being trained in FBA technology, and using this training 2-3 times each year could mean early identification of problem behaviours and better student outcomes (and more well-informed teachers).

2.6 Research Questions

The aim of this project was to develop a simple, cost effective assessment tool that teachers could use in the classroom/kindergarten that would accurately diagnose children at-risk of antisocial development. The project aimed to answer the following research questions:

1. What changes need to be made to the three-gate screening procedure, developed by Church et al. (2006), to develop a psychometrically sound screening procedure for students at-risk of antisocial development?

2. Is the third gate (the direct observation) necessary for the accurate identification of at-risk antisocial development in young children?
3. Can such a procedure be adapted for use by classroom teachers in New Zealand early childhood and primary school settings?

CHAPTER 3: DEVELOPMENT OF THE MULTIPLE GATING INSTRUMENTS

3.0 Introduction

This aim of this chapter is to describe the development of the three-step multiple gating screening instruments used in the current study. This work builds on the work of Church, Tyler-Merrick and Hayward (2006) and, for the second gate, the earlier work of Alexander (1980), Turnball (1980), Bradshaw (1989) and Church (1989; 1996). Three gates make up the multiple gating procedure. The first gate is a nomination process, the second gate is a rating scale, and the third gate a direct observation. Gates 1 and 2 closely replicate the work of Church et al. (2006) whereas the third gate was designed, piloted and implemented in this current study.

3.1 Development of the Gate 1 Teacher Nomination Form

The teacher nomination form used in the present investigation was based on an earlier version developed by Church (1996) and adapted from the one used in the Church et al. (2006) study. Two nomination forms were developed, one for kindergarten teachers, and a second one for primary and intermediate school teachers. The wording of each was changed to reflect the setting and age of the students. The word *children* was used for the kindergarten group and *students* for the primary and intermediate sectors. This adaption occurred because kindergarten teachers use the term "children", whereas primary and intermediate teachers use the term "students" when referring to their learners. A second change involved the inclusion of a *Frequently Asked Questions* section. Six questions and answers were developed to cover the questions most commonly asked by the 2006 teacher cohorts. This covered such questions as "what do you mean by antisocial behaviour?", "does a child/student have to be both non-

compliant and antisocial in order to be nominated?" and "one of our children/students have Autism and his interactions with other children/students are often socially inappropriate. Do I list him?" The final change to the nomination form was that ranking students from the *most* to the *least* difficult behaviours was removed. Ranking proved to be problematic for Church et al. (2006) as some teachers in their study had only one non-compliant student in their class and therefore could not comply with the ranking request. Because ranking data could only be provided by some teachers, the requirement to rank nominated students was not used in the current study.

The nomination form asked teachers to "Please list any children/students in your kindergarten/class who (a) comply with teacher instructions much less frequently than other children/students of the same age and any children/students who (b) engage in antisocial behaviour much more frequently than other children/students of the same age". The two nomination forms are reproduced in Appendices 3 and 4.

On the nomination form there are two columns. One column for those students who meet the definition and one column for the teacher to list children/student(s) with age appropriate social development – the control students. Control students (described as "partner child/student" on the form) were selected by asking the teacher to select the next child/student on the class roll who was not nominated as a student who engaged in elevated rates of antisocial behaviour and who was the same gender and year group as the nominated student. This student's name was then placed next to the nominated student's name to make a "pair". The teacher continued this process until all students in the class who met the definition (and their controls) had been identified and listed.

3.2 Gate 2: Development of the Gate 2 Social Development Scale

At Gate 2, the current study used the Canterbury Social Development Scale, Version 6 (CSDS-6). This version was based on Version 4 of the Canterbury Social Development Scale (CSDS-4). The original version of this scale (CSDS-2) was developed by Alexander (1980) and Turnball (1980) with the assistance of several special education teachers who were experienced in working with "disturbed adolescents" (as they were then called). This group developed a pool of 62 items and field tested these with the teachers of a sample of 79 disruptive secondary school (high school) students. This produced a rating scale consisting of 16 items which measured social skills and 30 items which measured antisocial behaviour, disruptive behaviour, and defiance. The behaviour described in each item of the CSDS-2 was rated on a 5 point scale from *never* engaged in through to *very frequently* and this rating scale has been retained for all subsequent versions of the CSDS. The CSDS-2 was used during the 1980s by a number of secondary schools.

In 1989 the scale was revised by Bradshaw so that it could be used in the primary school as well as the secondary school level (Bradshaw, 1989; Church, 1989). This revision also equalised the number of social skill items and antisocial behaviour items and established a cut-off that could be used for diagnostic purposes. A pilot version of this (the CSDS-4) was completed by the teachers in a sample of 45 "unmanageable children" and 90 typically developing children with one-third of each group drawn from Year 9 (grade 8), one-third from Year 6 (grade 5) and one-third from Year 3 (grade 2). This produced a scale with 20 clearly worded social skill items and 20 clearly worded antisocial/disruptive behaviour items. Reverse scoring of the antisocial behaviour items resulted in a total possible score of 200 with a score of 140+ capturing almost all of the typically developing children and scores of less than 140 capturing most of the

"unmanageable" children. It was this version of the scale which was used in the 1996 prevalence study (Church, 1996).

3.2.1 Development of the CSDS-6 items. In 2005, the Ministry of Education funded work to produce a further extension of the CSDS to include 3- and 4-year old children (Church et al., 2006). Over a three month period the development of items for the CSDS occurred in consultation with two Cultural Reference Groups and a group of experienced kindergarten, primary and secondary school teachers. Four pilot versions of the CSDS were constructed, each with 41 items for kindergarten children (3-4 year olds), Years 1-4, Years 5-8 and Years 9-10 students. Half of the items described prosocial behaviours and half were descriptions of antisocial behaviours.

There were 11 more items than were intended for the final version of the scale and this was to allow for items which failed to gain approval from the Cultural Reference and Teacher Groups or for items that failed to demonstrate the highest correlation with the total score on the CSDS criterion. Many of the items were drawn from the 1989 study by Church as these were items which were known from previous studies as being highly correlated with teacher judgement regarding the presence or absence of what was referred to then as "childhood behaviour disorder". Additional items were generated by the project directors and the Cultural and Teacher Reference Groups, using the Walker and Severson (1992a) and Feil et al., (1995) rating scales. On their own the SSBD and the ESP were not considered suitable for use in the New Zealand context. There were three reasons for this. First, New Zealand is a bicultural nation where under the Treaty of Waitangi, Māori (the indigenous population) and the Crown agree to work in partnership, have equal participation, and there is protection and recognition of Māori customs

and practices. For a behaviour screening procedure to be used in New Zealand, consultation must occur with Māori to ensure these three principles are upheld. Second, the SSBD is culture specific to the USA and presented in a style and written in a language which New Zealand teachers (Māori and Pākehā) do not easily relate too. For example, it would be very rare for New Zealand teachers (or parents/whānau) to refer to students/children as having either internalising or externalising behaviour problems. In addition, at gate 2 of the SSBD, teachers are requested to complete the *Critical Events Index* and two rating scales, the *Adaptive Behavior Scale* (ABS) and *Maladaptive Behavior Scale* (MBS). This requirement, as reported by the teacher reference group, appeared time consuming and cumbersome and could put teachers off completing the behaviour screen. Third, at gate 3, New Zealand schools would struggle to find a trained person to undertake the classroom and playground observations. This is a resourcing issue as there are not enough educational psychologists, behaviour analysts or Resource Teachers: Learning and Behaviour to undertake these direct observations and do the necessary analysis.

Of the 41 items, 27 were identical across all four scales and 14 items existed in two versions: one for the younger children and one for the older children. For example, "*knows and complies with centre limits and boundaries*" is more age appropriate to 3 and 4 year old children, whereas "*follows established classroom rules*" is more age and setting appropriate for primary and secondary aged students. Likewise, items such as "*perceives insults and criticism where none were intended*" and "*insults others or put others down using lewd, obscene or sexualised language*" was more age appropriate for students from Years 5-10 than for the younger age groups of kindergarten and Years 1-4. The wording of the 14 items reflected these age differences.

Examples of some of the retained original worded items include, "*ignores initial requests and directions even though he/she has heard them*", "*takes his/her turn when others are waiting*", "*expresses anger appropriately (without becoming destructive or violent)*" and "*behaves in ways which result in other students actively avoiding having to talk, play or work with him/her*". These items described behaviours which occur across all age groups and the wording was appropriate for both the kindergarten and primary and intermediate sectors.

During the development of the items, seven items were removed because they failed to demonstrate high correlation with the total score on the CSDS criterion. Examples of these items from the prosocial scale include "greets people appropriately, e.g. smiles, nods, says 'hello', or stops to talk" and "expresses wants and needs by asking in an appropriate manner". Examples from the antisocial scale include "intentionally gives exaggerated or untruthful accounts about things which have happened" and "behaves like a sore loser, e.g. cheats or withdraws from games, or makes a big fuss when he/she loses". Four other items were removed on the advice of the Cultural and Teacher Reference Groups.

3.2.2 Cultural Reference and Teacher Groups. All of the 41 items from the Church (1996) prevalence study were examined by two Cultural Reference Groups and one group of experienced early childhood, primary and secondary teachers. These groups also helped generate new items and discussed the inclusion of those items already identified.

The primary aims of the Cultural Reference Groups were to ensure that the items in each scale were reflective of, and acceptable to, parents across the main cultural groups living in Aotearoa/New Zealand. Culturally appropriate was defined as "one where both the procedures which are used and the language in which these procedures are described are viewed as

acceptable by European, Māori, Pacific Island and Chinese communities in New Zealand". A culture fair screening procedure was defined as "one which identifies the same group of children and youth regardless of the cultural community in which they are being raised and educated" (Tyler-Merrick, Church, & Hayward, 2006, pg. 4).

Two Cultural Reference Groups were established to evaluate and comment on the rating scales. The first Cultural Reference Group consisted of Māori and Pacific Island nation representatives. Feedback was received from representatives of a number of Māori iwi: Ngai Tahu, Te Aupøuri, Ngati Porou, Ngāpuhi, Tuhoe, Te Arawa, Tainui and Ngaiterangi; and from representatives of the Pacific Island states of Tonga, Nuie, Solomons, Samoa and Tokelau. The Chinese Reference Group consisted of senior international students from a number of provinces from China. The vetting task was carried out at four meetings and feedback was also received from other contributors via more informal routes. This provided a wider context within which feedback came, that is, both via a more formally convened forum and through an informally constituted one - the kūmara vine where group members discussed the items with their larger group of contacts.

During the meetings, there was robust discussion and feedback with discussion occurring around the cultural acceptability and appropriateness of the Gate 1 nomination definition and rating scale items. Members of the Māori and Pacific Island Cultural Reference Groups elected to consider not only each of the definitions and rating scale items but also the question of whether there should be a screening procedure at all. Extensive debate and reservations were also aired about the overall impact of the screening procedure including the cultural framework in which it was embedded. The reservations and concerns expressed however were over-laid by the sentiment that attention to developing a well-designed screening procedure had the potential

to reduce, rather than increase, what was perceived by many to be the present unfair treatment of those Māori and Pacific Island students who were perceived as misbehaving. It was also argued that such a screening procedure could not be developed without also developing a fully resourced and provisioned infrastructure that supported the students who were identified and their teachers, schools and whānau/family.

One of the aims of the cultural group meetings was to identify any items which were so culture specific that they would need to be removed prior to the commencement of the pilot study. No such items were identified. Members did identify four rating scale items which they believed may result in cultural bias. The items which were identified included:

- Makes eye contact when conversing with others
- Tries to play with other children but is rejected by them
- Associates with students who often get into trouble, and
- Says things which indicate that he/she has a low opinion of himself/herself

It was recommended by the groups that these items not be included in the final screening procedure as the first item was not universally regarded as a socially desirable behaviour and the last three were not universally regarded as socially undesirable behaviours. Overall, there was considerable discussion regarding the wording of several of the items in the rating scales and, in light of these suggestions, a number of changes were made to the rating scale.

At the end of the consultation process, the above mentioned four items were rejected by the Cultural and Teacher Reference Groups and were removed from the pool of items.

This revision resulted in a set of four scales which covered Kindergarten, Years 1-4, Years 5-8 and Years 9-10. The CSDS-6 contained 30 items; half of the items were descriptions of positive social behaviours and half were descriptions of antisocial behaviours.

To further support the inclusion of the CSDS-6 in this current study, teachers in the Church et al. (2006) study reported they clearly understood the meaning of the Gate 1 nomination definition and each of the items in the Gate 2 rating scale were written in the New Zealand idiom and were culturally appropriate. Furthermore, the scale was quick to complete. Moreover, the findings from this study found that in 95% of the cases reported the CSDS successfully discriminated between those students who were, and those who were not, engaging in elevated levels of antisocial behaviour. It is, therefore, this version (CSDS-6) which was used with the 3-4 year old kindergarten children and students from Years1-4 and Years 5-8 in the current study.

3.3 Gate 3: Development of the Direct Observation Instruments

Two major decisions were made before work commenced on the Gate 3 observation form. The first was that teachers would undertake their own direct observations recordings, that is, they would self-record their instructions and the responses of the nominated and control students while they were teaching their normal lesson. Second, the focus would be on the student's responses to teacher requests and instructions because it is this information which will help determine the function of the student's non-compliance (and from which an intervention programme would develop). A set of 30 compliance instructions was selected for the sample.

3.3.1. Pilot Project. The direct observation procedure evolved over four versions. The pilot study Instruction Manual and Recording Form is reproduced in Appendix 5. The first recording form attempt was quite prescribed and listed, in words, possible teacher instructions, student response to compliance request, the time taken for the student to respond to the compliance instruction and whether defiance occurred or not. This form was informally

discussed with colleagues within the College of Education at the University of Canterbury. Their feedback suggested the form was too wordy and appeared cumbersome to complete when working in a busy classroom/ kindergarten. In the second version, all coding definitions were removed and placed on a separate page but this form still did not show how to record accurately a repeated teacher instruction to one student. The form still appeared cumbersome and so was revised again. The third version was piloted with seven teachers. The direct observation procedure was developed and piloted with three kindergarten, two primary and two intermediate school teachers in their classrooms. These teachers were not part of the main study. This version was refined to record a code for instruction type, a small space to write the instruction in abbreviated format, and the time it took each student to comply with the instruction to code for classes of defiance.

One training session of approximately one hour was provided to train the pilot teachers in the observation procedure. Training occurred in their classroom at the end of the teaching day. The author talked through each of the procedure steps and then, with an example provided by the teacher, modelled how to complete the observation form. Any questions were answered and another teacher lead example was provided, this time with the teacher recording as they worked their way through the example. Feedback was provided as the example developed.

3.3.2 Teacher Feedback. Feedback from the seven teachers suggested several changes to the recording form. For the kindergarten setting, a second recorder/teacher was required because the teacher could not manage both the mat/circle time activities and the self-recording at the same time. The following procedure was introduced. At observation time, the teacher who completed the first rating scale for the nominated and control "pair" of children was to undertake

the role of "lead teacher" at mat/circle time. One of the other two teachers would then record the observation. If, however, another teacher gave an instruction at mat time to the whole group or to the nominated pair of children (and expected compliance) then that teacher wrote her instruction and the child's response on the recording form. This procedure enabled recording of all possible compliance instructions and responses.

The two intermediate and two primary teachers managed the observation form competently but commented they needed to memorise the codes "off by heart" before they started. Once they had done this they found the recording procedure easy to apply. One of the four teachers did not require any practice opportunities prior to recording, one teacher had one practice opportunity and another had two practice opportunities while the fourth teacher (the one with the least teaching experience) required four practice opportunities before she felt confident to start self-recording.

The final change to the form involved placing the classroom instruction, compliance and defiance definitions on the recording form so that teachers could easily refer to them. All the teachers had problems with the "assertive" code, in that as written, the definition described a disciplinary action. As a result, the "assertive" code was combined within the "disciplinary" code. The following procedural changes were then made. The defiance categories were redefined to add muttering and avoidance behaviours, to remove spitting, and to merge hitting and kicking. The word "avoidance" was used as all the teachers had a clear understanding of what this meant and provided consistent examples of what constituted "'avoidance" in the kindergarten or classroom. Finally, the instruction type was abbreviated to one letter. For example, C for everyday classroom instruction so it could just be circled while compliance (√) or non-compliance (X) could also just be circled. The time between the teacher's instruction and

student compliance was also problematic and was tightened to "within 10 seconds" as the teachers reported 25 seconds was too long to wait for compliance. They could also "count in their heads" a 10 second interval while still teaching and managing the classroom whereas the 25 second interval was too difficult for them to manage. The multiple gating screening procedure operated in this current study is shown in Figure 1 below.

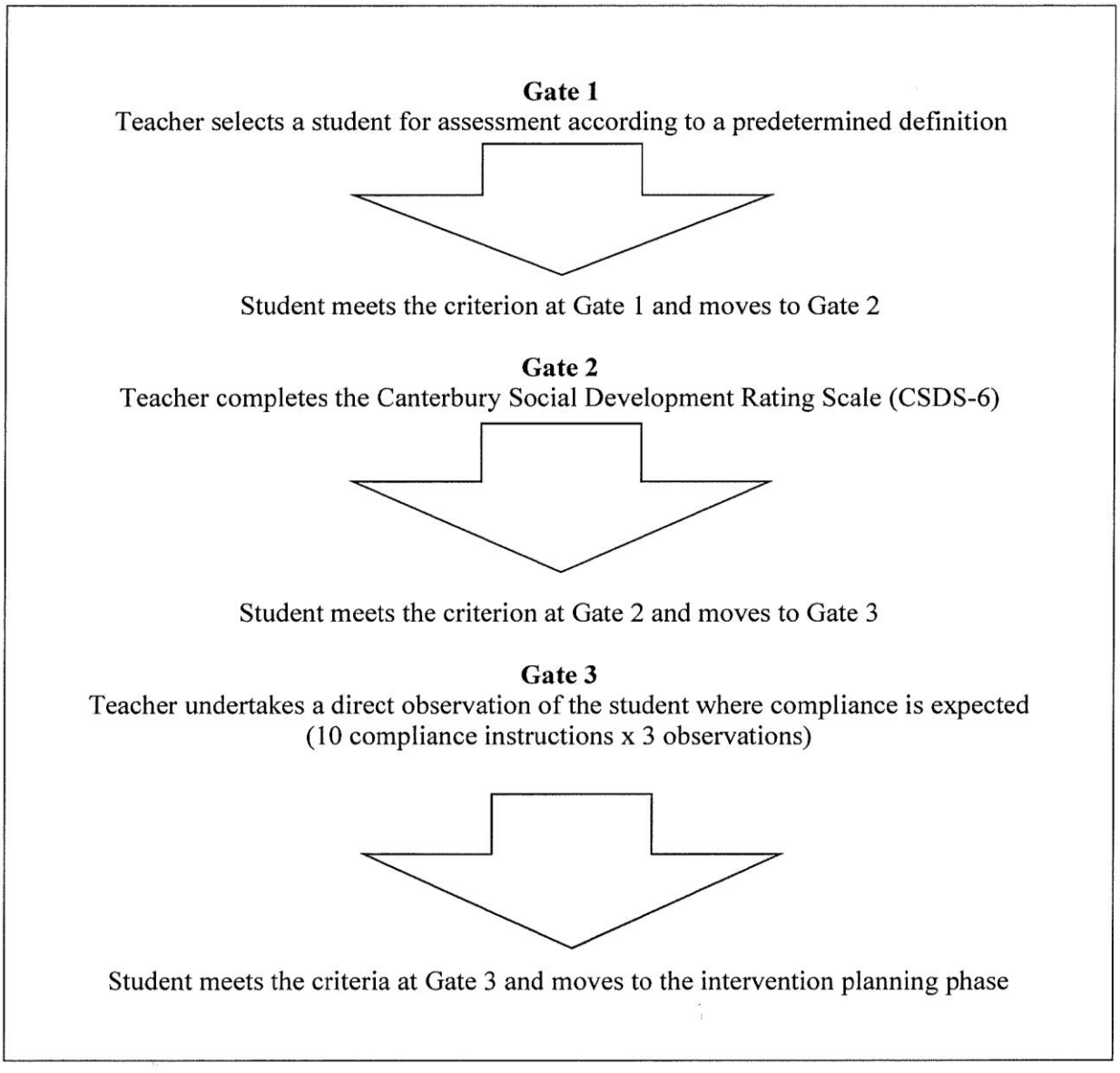

Figure 1: The three gate multiple gating procedure used by teachers for screening elevated levels of antisocial behaviour in Kindergarten and Years 1-8 students in this current study

3.4 Category Codes and Definitions

As described above, a number of categories, codes and definitions were developed from the pilot study. These codes were grouped into three main categories; instruction type, compliance/non-compliance and defiance. Each category was made up of a sub-group of behaviours. The category codes and behavioural definitions are described below. Refer to Appendices 6 and 7 for a copy of the kindergarten and Year 1-8 teacher Instruction Manual and recording forms.

3.4.1. Instruction Type. The number and type of instruction provided by the teacher to the nominated and control student (or class or group where the nominated and control students were expected to comply) covered a range of everyday classroom and disciplinary instructions, questions, and teacher signals. These were defined and coded as follows.

Everyday classroom instructions were defined as instructions where compliance was expected. For example, requesting to line up, put their hats/jackets away, sit on the mat, get comfortable, sit at their desk, return notices from home, answering roll call, putting activities out/away, putting their hand up, standing up and sitting down on request, coming to the teacher's desk, taking homework out, taking books out, having pens ready, eyes this way - looking this way, listening please and walking quietly. This was coded by the teacher circling the C on the recording form.

Disciplinary instructions were defined as instructions which were directed to the nominated or control student where they were reprimanded for engaging in a behaviour which was unacceptable to the teacher. Examples include, "If you don't do this now then (consequence)", the student's name repeated more than once, "quiet please" (with tone), "I am

waiting", "do it now", "look at me", and "listening now". This was coded by the teacher circling the D on the recording form.

Questions were defined as a form of words to the nominated or control student to elicit information. Examples include, "will you please ...", and "would you like to...". This was coded by the teacher circling the Q on the recording form

Signals were defined as signs and gestures that served to communicate information. Examples included the teachers clapping their hands together to get student attention, hands placed on head, using a bell, folding arms, and hand up in air. This was coded by the teacher circling the S on the recording form.

Other instructions included any other instruction that did not meet the codes as defined above. This was coded by the teacher circling the O on the recording form.

3.4.2 Compliance and Non-Compliance. *Compliance* was defined as "following the teacher's instruction within 10 seconds". This was coded by the teacher circling a tick (√) next to the instruction given.

Non-compliance was defined as "not following the teacher's instruction within 10 seconds". This was coded by the teacher circling a cross (X) next to the instruction given.

3.4.3 Defiance. The type of failures to comply in each of the following categories were defined under the following behaviours; swearing; muttering; hitting or kicking; throwing or damaging, and avoidance.

Swearing was defined as an expletive said in response to a teacher instruction. Examples include words such as "shit", "bitch", "like f--king hell" and "f--k off". This was recorded by circling S on the recording form.

Muttering was defined as uttering something in a low and indistinct tone. This was recorded by circling M on the recording form.

Hitting/kicking was defined as a deliberate and forceful blow to a person or object which might or might not be successful in touching them. This was recorded by circling H on the recording form.

Throwing or damaging was defined as projecting something through the air which could cause damage to people and/or equipment. This was recorded by circling T on the recording form.

Avoidance was defined as non-disruptive, intentionally ignoring and intentional off-task behaviour where the nominated and/or control student failed to comply with a teacher instruction by simply continuing with their current activity. This was coded by the teacher circling A on the recording form.

3.5 Qualitative Measures

Qualitative measures for *teacher willingness* to engage in the three-step screening process and their competence in doing this were developed. Teacher willingness was defined as "the amount of enthusiasm to get involved and undertake the three-step procedure" while *teacher competence* was defined as "the capability to undertake the procedure with skill and independence".

Both measures were scored on a self-developed three point Likert scale. Teacher willingness was scored as (1) *obliging,* (2) *OK,* or (3) *being keen.* Teacher competence was scored as requiring (1) *lots of assistance,* (2) *requiring some assistance,* or (3) the teacher being *independent* in the procedures.

3.6 Construction of the "At Risk" Criterion-Referenced Validity Measure

The following case review procedure was used to construct an "At-Risk" and "Not-at-Risk" criterion referenced validity measure where one variable or set of variables predicts an outcome based on information from the other variables. The variables examined during the case review and their relative weightings in the "At-Risk" measure are set out in Table 5. A student was classified as At-Risk if he or she met the criteria of 10 points or more from the six variables listed in Table 5. The criterion for scoring consisted of the following:

Gate 1. Five points were scored by the class teacher nominating a student as meeting the definition of "antisocial behaviour". The selected control student was awarded zero points. The RTLB score was determined and received 2 points if the teacher was currently receiving or had referred the nominated or control student for RTLB assistance. Zero points were awarded if the teacher had not referred the student to RTLB services.

Gate 2. Points at Gate 2 points were determined by the suggested cut-off point of 112 across the 134 students on their total CSDS-6 score. A score of 111 and below were given 5 points and those 112 and above received zero points

Table 5*: Criteria Employed During the Case Review and the Construction of the Criterion Variable At-Risk or Not-At-Risk*

Component	Weighting	
Nominated or Control	Nominated = 5	Control = 0
RTLB referral to RTLB Service	Referral = 2	No referral = 0
Total Score on CSDS (with Antisocial items reverse score)	0 to 111 = 5	112 to 150 = 0
Total % Compliance Score	0 to 74.99 = 2	75.0 to 100 = 0
Total Avoidance Score	5 to 30 = 2	0 to 4 = 0
Total Antisocial Behaviour Score	2 to 20 = 2	0 to 1 = 0
	Total = 18	

**RTLB service. The Resource Teachers: Learning and Behaviour Service.*

Gate 3. At Gate 3, the compliance points score was derived from the percentage of time the student complied with the teacher's instructions over the 30 compliance instructions. Seventy-five percent compliance was set as the cut-off point as this percentage appears to be an acceptable level of compliance (Cooper, Heron, & Hayward, 2007). The avoidance score was derived from the total number of times the student engaged in avoidance behaviour during the three 30 teacher compliance instructions. The score of more or less than 4 was determined as the cut-off because students could be tired or feeling ill or something similar and thus may not respond as quickly to the teacher instruction as they usually did. The number 4 reflects individual situations. Students received zero points if they scored received four or less avoidance behaviours. Finally, the antisocial behaviour score was derived from the total number of times the student engaged in swearing, muttering, hitting and throwing during the 30 teacher compliance instructions. The score of 2 was determined as the cut-off as any form of antisocial behaviour is unacceptable but the benefit of doubt could be placed on just one occurrence. A

score of 1 or less was recorded zero. A total of 18 points could be scored. A cut-off score was set at the mid-point of 9.

CHAPTER 4: METHOD

4.0 Introduction

Previously described in Chapter 3 was the development of the three-step multiple gating instruments which were used in this current study. This chapter describes the procedures used to recruit schools, kindergartens, teachers and students as well as describing how the teachers administered the Gate 1 nomination form, the Gate 2 CSDS-6, and the Gate 3 direct observation procedure. The measures, reliability and data analysis are also described.

4.1 Study Design

The theoretical framework of this study was situated within social learning theory and applied behaviour analysis. Derived from extensive behavioural research, and as described in chapter 1, Patterson and colleagues (refer to Eddy et al., 2001; Patterson et al. 1989) found that antisocial development begins with those moment-to-moment interactions in families when parents use coercion as the primary mode of controlling children. There are, of course, other determinants to children developing along an antisocial trajectory such as cultural and peer influence, mental health issues, emotional distress and so on. This study, however, was situated within an educational context and based on the interactions between teachers and students, thus the theoretical framework was based within social learning theory and applied behaviour analysis.

A mixed method approach was used to answer the research questions. A standard statistical analysis in the form of the Conditional Probabilities Framework (see Kettler and Feeney-Kettler, 2011) was applied to answer the first and second research questions. To answer

the third research question, grounded theory, a qualitative research method, was used. This method does not aim for the 'truth' but to interpret what is happening in the data and offers an analysis of how and why this happens. Grounded theory contains both inductive and deductive reasoning. In this theory, the questions the researcher asks are "what is going on?", "what are the main problems for the participants" and "how are they trying to solve it?" Grounded theory is judged by how closely the developed concepts fit with the incidents they are representing, captures the attention of the real concerns of the participants and provides an explanation of how the problem is being solved. These concepts can be altered when new relevant data is compared to existing data (Charmaz, 2011).

This study was designed in two parts. Part I was a close replication of Gates 1 and 2 from the Church et al. (2006) study. Part II extended the work of Church et al. by designing, piloting and training teachers to self-record a direct observation during a typical teaching lesson of a student whom the teacher nominated as engaging in elevated levels of antisocial behaviour and a control student.

4.2 Ethical Approval

Prior to recruitment, ethical approval was sought and obtained from the University of Canterbury Education Human Ethics Committee (see Appendix 8). To inform the Regional Kindergarten Association and Kindergarten Head Teachers and the school Boards of Trustees and Principals of the overall aims of the study, the author developed a five page Information Brochure for their perusal. These are reproduced in Appendices 9 and 10. This brochure provided the context, aims and a full description of the steps of the study along with the contact details of the author and senior supervisor. At the next level, individual information sheets for

the principals/head teachers, teachers, parents, and students were developed. These are reproduced in Appendices 11 to 15. In line with the information sheets, consent forms for each of the participants (and parents) were also developed and disseminated with the information sheets. Informed consent was sought from all students in each of the participating classrooms because the author did not know which students would be selected to be the nominated or control students. Each information sheet provided an introduction to the author, the aims of the study, a description of the work requested specific to each of the Year groups, the time taken to undertake this work, a statement ensuring confidentially and anonymity and finally, a thank you statement for considering the invitation to participate. The consent form information reiterated the main points from the information sheets and then requested each participant to sign that they understood what was requested of them or in the case of a parent, agreed to their child's participation. Each principal or classroom teacher organised and collected student and parental consent forms prior to starting work on the Gate 1 form. Across all the participating kindergartens and schools only three parents declined permission of their child to participate. Two were from parents in one kindergarten and one was from a parent in a school.

4.3 Recruitment and Description of Schools and Kindergartens

Over a two year period, three kindergartens, eight primary and two intermediate schools were recruited from Christchurch and the West Coast of the South Island in New Zealand. The kindergartens and schools were ethnically diverse and ranged from decile level 2 (low) to decile level 7 neighbourhoods. Decile level is the New Zealand measure of the socio-economic status of the community in which the school is located. Low decile schools receive additional government assistance such as the Social Worker in Schools and Fruit in Schools programmes;

they also receive an additional government subsidy for extra resourcing. Children who attend decile 7 kindergartens and schools typically belong in families where their parents/caregivers are in medium to well-paid employment and where only a small number of people live in the family home. Decile 4 schools have a mixture of both types of families.

4.3.1 Recruitment Procedures. Recruitment extended over a two year period, which is longer than originally anticipated because the earthquakes in Christchurch interrupted the day-to-day work of schools and kindergartens (and their communities). Given the additional workload and stress placed on teachers at this time, it was deemed inappropriate to attempt to recruit in Christchurch or the surrounding areas at the time.

4.3.2 Recruitment of Kindergartens. Kindergartens were recruited first. This was achieved by approaching the regional branch of the National Kindergarten Association. In New Zealand, kindergartens are standalone with each kindergarten belonging to a regional organisation which in turn is affiliated to a national body governing 430 kindergartens. Kindergartens share a common philosophy and their teachers all have a diploma and/or degree in early childhood education. The regional association's Manager of Kindergarten Operations provided a list of seven kindergartens. Only seven kindergarten contacts were provided because the Manager did not want to burden the author with attempting to recruit from other kindergartens when she was aware those teachers were already committed to other initiatives thus would decline acceptance to join this study.

Each head teacher at the seven kindergartens was telephoned, provided with an overview of the study and invited to meet and discuss the project further. Three head teachers agreed to participate at this initial telephone conversation.

4.3.3. Kindergarten Settings. The three kindergartens recruited were within Christchurch and in a radius of 10 kilometres of each other. Kindergarten 1 and 2 both had three teachers and 25 children aged three or four years of age on their roll. Children attended from 8.30 a.m. to 2.30 p.m., Monday to Friday. Kindergarten 3 also had three teachers and operated Monday to Friday but with five morning sessions held from 9.00 a.m. to 12.00 noon for the four-year-old children and three sessions in the afternoon (Monday, Tuesday and Thursdays) from 1.00 p.m. to 3.00 p.m. for the three-year-old children. At this kindergarten there were 30 children attending both the morning and afternoon sessions. Kindergarten 3 was the most affluent with a decile level of 7 while the other two kindergartens were positioned in low socio-economic suburbs. All three kindergartens were well resourced and operated a very similar daily schedule with a mat-time at the beginning and/or at the end of the session, a morning or afternoon tea time, with free play periods in-between. The children were expected to assist with tidy up at the end of the session. During the free play periods, children selected their own curriculum activities from a range of literacy, numeracy, art, drama, science, fine and gross-motor activities. Mat-time and morning/afternoon tea were structured times and were teacher directed. Stories and/or music with actions were the typical activities occurring at mat-times.

4.3.4 Recruitment of Schools. Recruitment of schools occurred in two phases. Recruitment during the first phase was in Christchurch where eight schools were selected based

on data provided during a survey undertaken the previous year into the numbers of students reported to be as engaging in elevated levels of antisocial behaviour. Because each of these principals had responded to the survey, they were telephoned, provided with an overview of the current study and invited to participate. The author then met with the individual principals to fully explain the aims of the study and the activities expected of the teachers. From these meetings three primary and two intermediate schools were recruited.

For the second phase, five primary schools were recruited from the West Coast of the South Island. These schools were selected because they had been unaffected by the major earthquakes which had disrupted the work of all Christchurch schools and where further recruitment was impossible. Recruitment initially occurred through the Chair of the Principals' Association in this province. The author approached the Chair with an invitation to participate in the study. The Chair then suggested he discuss the study aims with the Principals' Association group and seek their support for the project also. All six principals agreed to participate but at the initial meeting at one of the schools, the teachers elected not to participate. As a result, five schools were successfully recruited.

4.3.5 School Settings. Four of the Christchurch schools (three primary and one intermediate) were within four kilometres of each other with the remaining intermediate school 10 kilometres away. Intermediate schools enrol 11 and 12 year olds (Grades 6 and 7). Two of the three primary schools were contributing schools which enrolled students for Years 1-6 (Grades K to 5) and one school was a full primary with students attending from Years 1-8 (Grades K to 7). The rolls in these three schools ranged from 236 to 333 students. The intermediate schools covered Years 7-8. One intermediate school was considered large with 785

students while the other intermediate school had a roll of 489 students. All of the schools were ethnically diverse and their decile levels ranged from 2 to 5.

Of the five primary schools recruited from the West Coast, all were full primary (Years 1-8; Grades K to 7) and, with the exception of one, which had a decile rating of 2, all were decile 4 schools. All were ethnically diverse. Rolls ranged from 18 to 278 students.

4.4 Recruitment of the Teacher Sample and Participants

As previously described, the author telephoned each kindergarten head teacher and each school principal to invite them to participate in the study. The author then met with the Head Teacher or Principal to describe the project aims and requirements. The head teachers and principals discussed the study aims with their staff at their regular staff meeting. An information brochure outlining the project, consent forms and the behaviour assessment material were provided for all staff members at this time. Teachers, who indicated a desire to participate, informed their principal who in turn informed the author of the teacher's name and email contact. One or two weeks later the author arranged a meeting to discuss the study and the induction requirements with these participating teachers. The Board of Trustees, Principals/Head Teachers and teacher consent forms were collected at the second visit to the school or kindergarten.

4.4.1 Teacher Participants. Of the 126 kindergarten and primary teachers who were invited to participate, a total of 48 teachers volunteered to take part in the study. The number of teachers in each school who volunteered ranged from one teacher in School 10 to 9 teachers in School 5, and in Schools 1, 4 and 7 all teachers volunteered to be involved in the project. Of the 48 teachers, 4 were male and 44 were female. Six of the teachers were kindergarten teachers and

42 were primary or intermediate school teachers. Table 6 shows the number and the composition of the kindergartens, schools and teachers participating in the study.

Teaching experience varied across the 48 teachers. Eight of the 48 teachers were graduate teachers with two or less years teaching experience. Ten teachers had been teaching between three and nine years while the remaining 30 teachers had been teaching for 10 years or more. Of the 48 teachers, 34 completed all three of the three-step multiple gating behaviour screening procedure asked of them. This total included 6 kindergarten and 28 primary/intermediate teachers. Of those who did not complete the three gates, seven completed only Gate 1 and six completed only Gates 1 and 2. One teacher from School 4 volunteered to participate but found she had no students to nominate.

Table 6: *Demographics of Participating Kindergartens and Schools*

School Type	Decile level	Roll	Total teachers	Number volunteering	Number completing all three gates
Kindergarten					
Kgtn 1	3	25	3	2	2
Kgtn 2	2	25	3	2	2
Kgtn 3	7	30	3	2	2
Schools					
School 1 Contributing	2	236	8	8	4
School 2 Contributing	2	310	13	3	2
School 3 Full primary	4	333	12	3	2
School 4 Full primary	4	160	7	7*	6
School 5 Full primary	4	274	13	9	6
School 6 Full primary	4	37	3	2	2
School 7 Full primary	2	18	2	2	2
School 8 Full primary	4	278	14	3	0
School 9 Intermediate	5	785	29	4	3
School 10 Intermediate	6	489	16	1	1

Note: Kindergarten decile level taken from closest school in area. Decile level and roll number taken from July 2009 Ministry of Education statistics. *One teacher volunteered to participate but no students met the nomination criteria

4.4.2 Student Participants. The total number of students considered for gate 1 teacher nominations was estimated at 990 primary and intermediate students and 80 kindergarten children. Between September 2009 and July 2011, the three gates of the screening tool were piloted with a sample of 67, 3- to 13 year old students with elevated rates of antisocial behaviour nominated by their teachers and 67 control students. Of these, 11 pairs of students were at the kindergarten level, 34 pairs at the Year 1 to 4 level and 22 pairs at the Year 5 to 8 level. Altogether, observations and rating scales were completed for 134 students.

4.5 Teacher Training Procedures

The following procedures were used in training the teachers to undertake each gate of the multiple gating screening procedure. Each teacher was trained at a time convenient to them in their own kindergarten or school. For three schools and the three kindergartens this was during a full staff meeting of all or most of the teachers who had volunteered to participate in the study. For the remaining teachers training mostly occurred after 3.00 p.m. when students had left the school. Each teacher received the five page instruction manual reproduced in Appendices 6 and 7. This manual provided instructions for all three steps of the screening procedure and a copy of the Gate 3 observation form. During training, the author went over each step of the procedure and explained and modelled (a) how the nomination forms were to be completed, (b) how control children/students were to be identified as the next on the roll after the selected nominated student, be of the same gender and year group (c) how the rating scales were to be completed for both the nominated children/students and the control children/students in their class and (d) how to undertake the Gate 3 observations. Each step of the direct observation procedure was

carefully explained and modelled where appropriate. It was recommended that the teachers first carefully read through the instructions, memorise each code and then practice recording three or four of their compliance instructions with any two students who were not the nominated or control student(s) during a structured activity where they expected compliance. They were requested to practise until they felt they had mastered the recording procedure.

4.6 Procedural Fidelity

Procedural fidelity refers to the extent to which implementers adhere to the procedures described (Wolery, 2011). Following the teachers practice in the direct observation procedures, arrangements were made with the author to visit the classroom for a 10 minute instruction practice observation with the teacher in a real life situation. Oral and written corrective feedback was provided to the teacher on the accuracy of their recordings. Any other issues which had arisen were also discussed. Further practice opportunities were scheduled until inter-observer agreement reached 90%. Some teachers required only one practice opportunity whereas other teachers required two or three additional practice opportunities with the author. Once criterion performance had been demonstrated, the teacher then independently completed the Gate 3 observations.

4.7 Procedures

The procedures used by the kindergarten, primary and intermediate teachers followed three steps. Namely, (1) the selection of the nominated and control students, (2) the completion of a

30 item rating scale and (3) undertaking a direct observation of the nominated and control student in the classroom while the teacher was teaching.

4.7.1 Gate 1: The Nomination Procedure. Each participating teacher was first requested to complete the Nomination Form reproduced in Appendix 3 for kindergarten teachers and Appendix 4 for Years 1-8 teachers. The teacher could undertake this task if they had known the student for at least four weeks. This time was deemed long enough for a relationship to build and the teacher to establish classroom routines and expectations.

The nomination form asked the teachers to list any students in their kindergarten or classroom who "(a) complied with teacher instructions much less frequently than other children of the same age or who (b) engage in antisocial behaviour much more frequently than other children of the same age". There was no limit as to the number of students the teachers could place on the nomination form but they were asked to take care to consider any females in the class and/or students who were "quiet" and who might be overlooked. Control students were selected by asking the teacher to select "the next child/student on the class roll" who was not nominated as a student who engaged in elevated levels of antisocial behaviour and who was the same gender and year level as the nominated student. This student's name was then placed next to the nominated student's name to make a "pair". The teacher continued this process until all students in the class who met the definition (and their controls) had been identified and listed. Instructions for this process can be found in Appendix 6 for the kindergarten teachers and Appendix 7 for the Year 1-8 teachers. If the teacher experienced difficultly deciding whether to nominate or not nominate a student, they were referred to the "Frequently Asked Questions" on the back of the Nomination Form. Once the teacher listed both students, Gate 1 was completed.

Some teachers nominated more students than they were willing to complete the three gate procedure for, so to avoid teacher preferential selection, the author numbered all the "pairs" and placed the numbers in a box, gave the box a shake, and then withdrew a number. The number was then matched to the nomination form names and this "pair" was selected as one of the pairs to proceed to Gates 2 and 3. This process was repeated for the number of "pairs" the teacher was willing to assess. The Nomination Form showing the pairs selected was then photocopied for the author. All teachers completed this step at their first training session with the author.

4.7.2 Gate 2: The Canterbury Social Development Rating Scale Procedure. The second gate of the screening was a rating scale, the Canterbury Social Development Scale (CSDS-6). The CSDS-6 exists in four developmentally appropriate versions which had been piloted during an earlier study (Church et al. 2006). Three of these scales were used in this current study. These were the kindergarten scale designed for children aged 3 and 4 years of age, the Years 1-4 scale for students aged 5 to 8 and the Years 5 to 8 scale for students aged 9 to 12 years. These three scales are reproduced in Appendices 16 to 18. The rating scales were completed by the nominating teachers. Teachers were provided with the appropriate version of the rating scale for each of their nominated and control students. Prior to completing the rating scales and to aid their completion of the scales, nominating teachers were requested to familiarise themselves with the following guidelines written on page 2 of their CSDS-6.

1. *Please decide whether each of these behaviours is one which the named child engages in "very frequently", "often", "about half the time", "occasionally" or "never" and place a tick in the appropriate box.*

2. *When making these decisions, please take into account only the behaviour which you yourself have seen. It is most important that you do not allow your judgement to be influenced by what other people have told you.*

3. *When making these decisions, please take into account only the behaviour which you have seen during the past four weeks. It is most important that you do not allow your judgement to be affected by events which have happened at some earlier time.*

4. *When making these decisions, please record your immediate or first impression. Do not spend time pondering over individual behaviours.*

5. *Please complete every item. An incomplete scale cannot be used.*

6. *Each scale takes about 10 minutes to complete. Please select a period of time when you know that you will be free from interruptions to complete the scale.*

7. *After completion, please return your scale(s) to the Head Teacher/Principal.*

The Gate 1 and Gate 2 activities typically took the teacher about 10 to 15 minutes for each student to complete.

4.7.3 Gate 3: Direct Observation Procedure. The third gate of the screening tool took the form of a direct observation where the teacher self-recorded 30 compliance instructions during a teacher directed activity such as reading or maths for the school students, or at mat/circle time for kindergarten children. Reading, maths and mat/circle times were selected as these were times where teacher compliance was expected during both individual and group activities. Child/student responses to these compliance instructions were coded using the coding scheme reproduced in Appendices 6 and 7. Primary and intermediate teachers self-recorded their own instructions whereas a second teacher in the kindergarten observed and recorded another kindergarten teacher giving instructions during an activity where compliance was expected.

For ease of recording, it was suggested that the self-recording involve 10 compliance instructions recorded over three equally distributed occasions. The length of the observation was not of concern, of importance was that each of the three observations provided 10 instructions requiring compliance opportunities to the nominated and/or control student. Each set of 10 compliance instructions was recorded on the one page recording form reproduced in Appendices

19 and 20. This involved the teacher circling an abbreviation for instruction type, whether compliance or non-compliance occurred and the type of defiance (if any) observed for each instruction given. The teacher also wrote down keys elements of the instruction so that the author could determine what the instruction was about. Nominated and control children/students were observed at the left hand and right hand side columns of the recording form.

4.8 Measures

The procedures described above generated a number of quantitative measures for the three gates and qualitative measures for teacher responses to the procedures. In addition demographic information on the teacher and the nominated and control students was recorded. This information included the teacher's gender, ethnicity and the number of years teaching; while the teacher collected information on the participating student's date of birth, year group, gender, ethnicity, whether or not the student had been referred to or previously received RTLB support and/or the assistance of teacher aide. Disabilities such as autism were also noted.

4.8.1 Quantitative Measures. The following quantitative measures were taken. The number of students which teachers nominated as meeting the definition of antisocial behaviour was collected at Gate 1. At Gate 2, the measures included (a) each nominated and control student's score on the 15 prosocial items, (b) their score on the 15 antisocial behaviour items, and their total score on all 30 items with the antisocial items reverse scored. Gate 3 measures were collected for each observed nominated and control student on the:

1. Number of classroom instructions complied with within 10 seconds
2. Number of classroom instructions which were not complied with within 10 seconds

3. Number and type of instruction provided by the teacher under the categories of: everyday classroom, disciplinary, questions. and signals
4. Number and type of failures to comply in each of the following categories: swearing, muttering, hitting or kicking, throwing or damaging, and avoidance.

In addition, the number of gates each teacher successfully completed was also recorded.

4.8.2 Qualitative Measures. Measures of teacher willingness and teacher competence were undertaken by the author with both measures scored on a three item Likert type scale the author developed. Teacher willingness was scored from being (1) *obliging*, to (2) *OK*, through to (3) *being keen*. Teacher competence was scored from requiring (1) *lots of assistance* (2), *requiring some assistance* (3), through to the teacher being i*ndependent* in the procedures.

4.9 Reliability

Interrater agreement measures were collected at Gate 2 and Gate 3. At Gate 2, a second teacher other than the teacher who completed the classroom observations completed a separate social development rating scale (CSDS-6) independently for the nominated and control students in the three kindergartens (aged 3- 4 years) and the two intermediate schools (Years 7 and 8 students). In the kindergartens, a third teacher undertook this role and in the intermediate schools the deputy principal undertook this role.

At Gate 3, interrater agreement measures were obtained for 70 of the 210 direct observations, that is, 33% of all observations. These were undertaken by the author. Inter-observer agreement were obtained for one-third (10 of 30) of the teacher's compliance

instructions, the total number of avoidance behaviours recorded, and the total number of antisocial behaviours recorded.

4.10 Data Analysis

Data regarding both teacher and student responses were entered into the SPSS data management system. The following analytic approach was adopted to compare the criterion-referenced validity of the Gate 1, Gate 1 + 2, and Gate 1 + 2 + 3 measures relative to the At-risk and Not-at-risk Criterion. First, cumulative frequency graphs were prepared and cut-off scores were determined for the Gate 2 total scores and the Gate 3 compliance, avoidance and antisocial behaviour scores. Second, conditional probabilities were calculated using the procedure described by Kettler and Feeney-Kettler (2011) and Kettler et al., (2014).

A ROC analysis was not appropriate at Gate 1 as the analysis was between the level of agreement between the At-Risk and Not-at-Risk Criterion and the teacher nominations. A two-by-two table indicating the number of students in each of the four cells was complied. Using the cut-off point at Gate 2 with 100% sensitivity a ROC analysis was undertaken to determine if the third gate was necessary for the accurate identification of at-risk antisocial development in young children. This involved calculating and comparing the accuracy, PPV, NPV, sensitivity, specificity and the number of identified false negatives and false positives (misclassifications) at each of the cut-off points and gates.

On each visit to a teacher/classroom, the author recorded anecdotal notes on how the teacher undertook the observations and any difficulties or comments the teacher made regarding their training and observations regarding the three-gate procedure. Comments regarding the nominated or control student(s) were also recorded. Using grounded theory methods (Charmaz,

2011) these qualitative notes were coded into key points, reviewed again and then key concepts were drawn from the codes. These codes were reviewed again and then grouped into categories. It was from these categories *teacher willingness* and *teacher competence* were developed and defined. The author then completed a 3 point Likert scale for *teacher willingness* by circling either obliging, ok, or being keen and for *teacher* competence by circling either requiring lots of assistance, some assistance or being independent) on the 34 teachers who completed all the gates. The circles were then tallied.

CHAPTER 5: RESULTS

5.0 Introduction

Of the original 47 volunteer teachers, 13 withdrew from the study before they had completed all three gates, leaving 34 teachers completing the three step screening procedure in their kindergarten or classroom setting. Together these 34 teachers identified 67 students who met the definition for antisocial behaviour on the nomination form and 67 students who did not meet the definition of "antisocial" (the control group). The 34 teachers completed the 30 item Canterbury Social Development Scale (CSDS) and then completed three 10- to 15- minute observations of pairs of students in their classrooms. Of these 34 teachers, three were new graduate teachers with only one or two years teaching experience, six were teachers who had been teaching between 3 and 9 years and the remaining 25 teachers had been teaching 10 years or more.

5.1 Reliability of the Measures

5.1.1 Reliability of the CSDS. Reliability measures were undertaken at Gate 2 on the CSDS for all the kindergarten, (n = 22), Year 7 (n = 12) and Year 8 (n = 10) students. This involved 33% of the total number of students. A second CSDS score was obtained from another teacher who had previous contact with the nominated and control students.

As can be seen in Table 7 interrater agreement between the teacher and the second teacher for the total scores above and below the 112 cut-off point was high with an overall agreement of 91%. Kindergarten teachers were the most reliable with 100% agreement while the Year 7 and Year 8 teachers were similar in agreement with 83% and 80% respectively.

Table 7: *Gate 2 Percentage of Interrater Agreements on the 44 Students who scored Above and Below the Preliminary CSDS Cut-Off Point of 112*

Percentage of Agreement between Teachers and Second Rater	Kindergarten *n* = 22	Year 7 *n* = 12	Year 8 *n* = 10
	100%	83%	80%

Number of students = 44

In addition, there was a moderate correlation between the classroom teacher and the second rater scores between the prosocial (r =.80), the antisocial (r = .72), and the CSDS total score (r =.78).

5.1.2 Reliability of the Direct Observation Measures. Investigator observations were undertaken concurrently with 33% of the teacher observations. The percentage of agreements are reported in Table 8.

Table 8: *Percentage of Interrater Agreement for the Three Teacher Year Groups for Compliance, Avoidance and Antisocial Behaviours*

		Percentage of Agreements		
	No of Students	Compliance Responses	Avoidance Responses	Antisocial Responses
Kindergarten	21	86	90	100
Years 1-4	67	84	84	96
Years 5-8	44	80	86	98
Total Number of Students	132	*M* = 83	*M* = 86	*M* = 98

Interrater agreements were calculated for compliance, avoidance and antisocial behaviours occurring across one set of the three observations undertaken by the teacher. Overall, the percentage of interrater agreement across the three groups was acceptable with a mean

agreement of 83% for compliance, 86% for avoidance and 98% for antisocial behaviours. This agreement meets acceptability standards for direct observations (Cooper et al., 2007). Kindergarten teachers recorded the highest percentage of agreement for all three categories. There was a positive correlation between the classroom teacher and investigator between the total number of the compliance (r=.92), avoidance (r=.93) and the antisocial scores (r=.88).

5.2 Gate 1: Teacher Nominations

At Gate 1, teachers were requested to nominate as many students in their class or kindergarten as met the definition listed on the Nomination Form. As can be seen from Table 9, the 47 teachers nominated 179 students in total, however, only 67 students were followed through to Gate 3.

The 13 teachers who did not progress to Gate 3 nominated 60 of that total number of students. The number of nominations ranged from 1 to 9 students per teacher with two teachers nominating 9 students each. Twenty-one teachers nominated 91 students at Gate 1 but 10 of these teachers elected to follow through to Gates 2 and 3 with only 1 student, eight teachers continued with 2 students, two teachers elected 3 students and one teacher (T19) elected 7 of her 9 nominated students. A further 13 teachers selected 28 students and completed all three gates with these students.

Seven of the original 47 teachers (T18, T35, T37, T42, T43, T44, T48) withdrew from the study after completing the Gate 1 nomination process. Four of these teachers (T18, T42, T43, T44) were graduate teachers and withdrew because they felt they were "still learning the job" and reported being overwhelmed by their daily workload demands. One teacher (T48) had been teaching between 3 to 9 years and the remaining two teachers (T35, T37) had 10 or more years teaching experience. The students they nominated were removed from the data set.

Table 9: *Number of Teacher Nominations and the Number of Nominated Students at each Gate*

	No of Teachers	Total Teacher Nominations	No of pairs of Nominations Teachers selected to complete	Total Teacher Nominations completed
Teachers who completed Gate 1 but did not complete Gates 2 or 3	7	32	1 teacher = 1 student 1 teacher = 2 students 1 teacher = 3 students 2 teachers = 5 students 1 teacher = 7 students 1 teacher = 9 students	0
Teachers who completed Gates 1 & 2 but did not complete Gate 3	6	28	1 teacher = 2 students 1 teacher = 3 students 1 teacher = 4 students 2 teachers = 5 students 1 teacher = 9 students	0
Teachers who completed Gate 1 but selected only to complete a limited number of students at Gates 2 and 3	21	91	10 teachers = 1 student 8 teachers = 2 students 2 teachers = 3 students 1 teacher = 7 students	39
Teachers who nominated and completed all nominated students at Gates 2 and 3	13	28	4 teachers = 1 student 6 teachers = 2 students 1 teacher = 3 students 1 teacher = 4 students 1 teacher = 5 students	28
Totals	47*	179		67

**Number of teachers = 48 as one teacher agreed to participate but had no nominations.*

As can be seen in Table 10, 13 teacher nominated students identified as Māori and one as Pacific Islander. The majority of students, both nominated and control were Pākehā New Zealanders. Seven percent of the students were African in origin. Males made up 78% of the nominations. Five of the control students were receiving or had previously received RTLB assistance with three of these referrals from Teacher 23 and the remaining two referrals were from Teacher 39. Twenty nominated students were receiving RTLB assistance and of this number, four were female.

Table 10: *Year Group Composition, Ethnicity, Gender and Resource Teacher: Learning and Behaviour Status for the Nominated and Control Students at Gate 1: Teacher Nominations*

		Number of Students			
		Nominated	Control	Total Number & Percent	
Year Group	Kindergarten	11	11	22	16%
	Years 1-4	34	34	68	51%
	Years 5-8	22	22	44	33%
Ethnicity	Pākehā/New Zealander	51	48	99	74%
	Māori	13	12	25	19%
	Pacifika	1		1	0.4%
	Other	2	7	9	7%
Gender	Male	52	52	104	78%
	Female	15	15	30	22%
RTLB Assistance		20	5	25	19%

Total Number of Students = 134

5.3 Gate 2: CSDS Rating Scale

Forty teachers continued to Gate 2. All of these teachers completed Gate 2 without difficulty. In all cases these teachers marked all 30 items on the CSDS although six teachers did not record the date of birth of the nominated and control students. This was corrected by consulting the school records. Six teachers (T12, T13, T14, T15, T21, T36) withdrew after completing this gate. Four teachers came from one school and all cited workload demands. The data they had collected were removed from the data set. Thirty-four teachers continued to Gate 3.

5.4 Gate 3: Direct Observation

Thirty-four teachers self-recorded 30 of their compliance instructions to the nominated and/or control students during individual and/or group/class instruction. Table 11 shows the

mean percentage of teacher recorded compliance, avoidance and antisocial behaviours of both the nominated and control students over the 30 teacher compliance instructions.

Table 11: *Mean Percentage and Standard Deviation of Student Compliance, Avoidance, and Antisocial Behaviours Recorded by the Teacher during the 30 Compliance Instructions to the Nominated and Control Students at Gate 3*

Gate 3 Measures	Nominated Students		Control Students	
	Mean Percent	SD	Mean Percent	SD
Compliance	58	4.789	94	6.182
Avoidance	35	4.018	4	1.812
Antisocial	7	2.588		

Note: Percentages do not add to 100 as other categories were also recorded.
N = 134 students

The 67 nominated students spent on average 58% of their time complying with teacher instruction as compared to 94% for the 67 control students. Similarly, the nominated students engaged in avoidance behaviours 35% of their time as compared to only 4% of the control students. On average, the nominated students engaged in antisocial behaviour 7% of the time while the control students recorded zero antisocial behaviour responses.

5.5 Intercorrelations between the Measures

Table 12 presents the intercorrelations between each of the measures obtained. As can be seen there is a strong correlation between the Gate 1 Nominations with the At-Risk and Not-at-Risk Criterion measure *(r* = -.90).

All other measures correlate strongly with the At-Risk and Not-at-Risk Criteria with the exception of the total number of antisocial behaviours (*r* = .53), the combination of compliance

and avoidance behaviours *(r* = .49) and the combination of compliance and antisocial behaviours *(r* = .006).

Table 12: *Intercorrelation Coefficients between Gate 1 Teacher Nominations, the Total Pro-Social, Anti-Social and the Total CSDS Scores, the Percentage of Compliance, the Total Number of Avoidance and Antisocial Behaviours Observed, the Combination Total of Compliance, Avoidance and Antisocial Behaviour Scores and the Score on the At-Risk and Not-at-Risk Behaviour Criterion Measure*

	Teacher Nomination	CSDS Pro-social Scores	CSDS Anti-social Scores	CSDS Total Scores	Percent Comp.	Total No. Avoid. Behaviour	Total No. Anti Social Behaviour	Total No. Comp. & Avoid Behaviour	Total No. Comp. & AS Behaviour	Total No. Avoid & AS Behaviour	Total No. Comp. & Avoid & AS Behaviour
CSDS Prosocial Scores	.825										
CSDS Antisocial Score	.772	.884									
CSDS Total Scores	.821	.970	.969								
Percent Compliance	.824	.762	.759	.784							
Total Number Avoidance	-.818	-.738	-.707	-.743	-.945						
Total Number Anti-social	-.477	-.499	-.572	-.552	-.640	.391					
Total Number Comp & Avoid. Behaviour	-.585	-.457	-.398	-.439	-.459	.582	.040				
Total No. Comp & AS Behaviour	-.073	-.006	.007	.002	.150	-.153	.043	.662			
Total Number Avoid & AS Behaviour	-.832	-.773	-.770	-.794	-.990	.956	.644	.496	-.113		
Total Number Comp. & Avoid & AS Behaviour	-.694	-.580	-.546	-.570	-.624	.665	.337	.954	.636	.660	
At-Risk Criterion	-..887	-.846	-.847	-.870	-.813	.797	.530	.496	.006	.832	.626

All correlation are significant at the 0.01 level (2-tailed level). AS = Antisocial behaviour, Avoid = Avoidance behaviour, C = Compliance
N = 134 students

5.6 Criterion Referenced Validity of the Screening Procedure

Gate 1 teacher nominations, Gate 2 CSDS total scores, and Gate 3 direct observations were examined with a view to identifying their relative contributions to the At-Risk Criteria. Sensitivity and specificity were plotted for each criterion in a Receiver Operating Characteristics (ROC) analysis. Optimal cut-off points for each analysis were identified by balancing two objectives: that the cut-off points maximise the number of students correctly identified, and that the cut-off point has roughly equal sensitivity and specificity (Tarren-Sweeney, 2013).

5.6.1 Predicting Antisocial Development from the Gate 1 Nominations. The results indicate that teacher nominations at Gate 1 had 100% sensitivity, that is, all the students identified by the At-Risk Criterion were correctly identified and in the nominated group. Table 13 shows that from the 67 teacher nominations, 59 students were correctly identified as At-Risk and 8 students were misclassified as false positives.

Table 13*: Number of Students Identified by the Gate 1 Teacher Nominations as At-Risk or Not-at-Risk by the At-Risk Criterion*

	Gate 1 Teacher Nominations		
	Not Nominated	Nominated	Total
"At Risk" status			
No	67	8	75
Yes	0	59	59
Total	67	67	134

All the control students were correctly identified by this Gate indicating that teachers were accurate in their judgements. The results indicate that by using the "gold standard" of the At-

Risk Criterion, teachers would not need to undertake a Gate 2 rating scale (CSDS) for every student in their class; just the students they nominated.

5.6.2 Predicting Antisocial Development from the Gate 2 CSDS Total Scores. Table 14 shows that when the total CSDS scores were dichotomised with the At-Risk and Not-at-Risk criteria the total CSDS scores were very efficient in identifying 59 students as at-risk (true positives) and 75 students as not-at-risk (true negatives) with an accuracy of 97.0%. The optimal cut-off point of 112 was selected because this point maximised the number of students correctly identified, 130 of the total 134 students, and balanced the number of false negatives and false positives at two students each. Sensitivity and specificity were similar at 96.6% and 97.3% respectively as was PPV (96.6%) and NPV (97.3).

From the remaining seven possible cut-off points at Gate 2, sensitivity ranged from 94.9% to 100% while specificity ranged from 89.3% to 100%. With the exception of cut-off 109, all PPVs were lower than the PPV at cut-point 112 but NPV was higher above 112. Accuracy was high across all cut-points and ranged from 94.3% to 97.7%. Cut-off point 109 recorded an accuracy of 97.7%, however, this cut-off identified 3 false negatives. The cost of these three false negatives is already known in terms of the negative long-term education, social, justice and health outcomes. Findings of the ROC curve analysis indicate an AUC of .996.

Table 14: *Conditional probabilities and Receiver-Operating Characteristic (ROC) Area for the At-Risk and Not-At-Risk Criterion for Predicting Effectiveness of the Possible Cut-Off Points for Gate 2 CSDS Total Scores and Gate 3 Compliance, Avoidance and Antisocial Behaviours*

Gate Comparison		Percent						Number		ROC	
		SENS	SPEC	PPV	NPV	ACC	Correct Class.	False Negative + Case Total	False Positive + Non-Case Total	CI 95%	AUC
Gate 2	Cut-Off									.99.2 to 1.00	.996
CSDS	120	100	89.33	89.3	100	94.3	127/134	0 0/59	7 68/75		
	118	98.3	90.6	89.2	98.5	94.3	126/134	1 58/59	7 68/75		
	117	98.3	93.3	92.0	98.5	95.5	128/134	1 58/59	5 70/75		
	115	96.6	93.3	91.9	97.2	94.7	127/134	2 57/59	5 70/75		
	114	96.6	94.6	93.4	97.4	95.2	128/134	2 57/59	4 71/75		
	112	**96.6**	**97.3**	**96.6**	**97.3**	**97.0**	**130/134**	**2** **57/59**	**2** **73/75**		
	111	94.9	97.3	96.5	96.0	96.2	129/134	3 56/59	2 73/75		
	109	94.9	100	100	96.1	97.7	131/134	3 56/59	0 0/75		
Gate 2 + Gate 3	**120**	**100**	**89.33**	**89.3**	**100**	**94.3**	**127/134**				
Compliance	Percent									.801 to .995	.898
	96	98.3	12.5	89.2	50.0	88.0	59/67	1 58/59	7 1/8		

	91	98.3	25.0	90.6	66.6	89.5	60/67	1 58/59	6 2/8		
	87	98.3	37.5	92.6	75.0	91.0	61/67	1 58/59	5 3/8		
	77	**98.3**	**62.5**	**95.0**	**83.3**	**94.0**	63/67	**1 58/59**	**3 5/8**		
	75	94.9	62.5	94.9	62.5	91.0	61/67	3 56/59	3 5/8		
	73	89.8	62.5	94.6	45.5	86.5	58/67	6 53/59	3 5/8		
	71	88.1	62.5	94.5	41.5	85.0	57/67	7 60/67	3 5/8		
	70	84.7	62.5	94.3	35.7	83.5	56/67	9 50/59	3 5/8		
Avoidance	Total Number									.687 to .992	.840
	1	100	12.5	89.3	100	89.5	60/67	0 0/59	7 1/8		
	2	98.3	37.5	92.6	75.0	91.0	61/67	1 58/59	5 3/8		
	4	**98.3**	**62.5**	**95.0**	**83.3**	**94.0**	**63/67**	**1 58/59**	**3 5/8**		
	5	94.2	62.5	94.9	62.5	91.0	61/67	3 56/59	3 5/8		
	6	89.8	62.5	94.6	45.4	86.5	58/67	6 53/59	3 5/8		
Antisocial	Total number									.733 to .859	.796
	1	**59.3**	**100**	**100**	**25.0**	**64.1**	**43/67**	**24 35/59**	**0 0/8**		
	2	49.1	100	100	21.0	55.2	37/67	30 29/59	0 0/8		
	3	35.5	100	100	17.3	43.2	29/67	38 21/59	0 0/8		

ACC = accuracy, AUC = area under the curve, CI = confidence level, Correct Class = Correct Classification, CSDS = Canterbury Social Development Scale, NPV = negative predictive value; SENS = sensitivity; SPEC = specificity, PPV = positive predictive value; ROC =receiver-operating characteristics, Teacher Noms. = Teacher Nominations. Number of Students = 134

5.7 Is The Third Gate Necessary?

To answer the second question, is the third gate necessary for accurate identification of students at-risk of antisocial development, the following two-step analysis was undertaken.

5.7.1 First Selection. At Gate 2 the optimal cut-point for the single-gate procedure was 112 as this cut-point had the highest accuracy of 97.0% (AUC = .996). At this cut-point there were 59 true positives and 75 true negatives yielding a balance of 2 false negatives and 2 false positives.

5.7.2 Second Selection - First Gate. To examine the effectiveness of whether Gate 2 or Gate 2 and 3 together or Gate 3 on its own was more accurate, a cut-point of 120 was used at Gate 2 as this yielded 100% sensitivity. From this analysis 67 cases were identified; 59 true positives and 8 true negatives yielding no false negatives and 7 false positives.

5.7.3 Second Selection - Second Gate. The three Gate 3 measures of compliance, avoidance and antisocial behaviour were then analysed. Antisocial behaviour yielded a low accuracy of 64.1% at cut-point 1 and an AUC = .796 so was discounted from the analysis. The compliance cut-point of 77% and the avoidance cut-point of 4 provided identical scores across sensitivity, specificity, PPV, NPV, accuracy and the number of students correctly identified as 1 false negative and 3 false positives and were selected for analysis. The AUC scores were also similar but compliance provided a greater AUC of .898 compared to .840 for avoidance. From this analysis 59 students were identified as true positives and 8 identified as true negatives.

The findings of this analysis indicate that both Gates 2 and 3 were effective in identifying those students at-risk of antisocial development but on closer examination at the suggested cut-off points (as indicated by the bold print in Table 14), Gate 2 was the most effective, not only in

terms of the number and type of misclassifications but also in terms of accuracy and AUC scores.

5.8 Prevalence.

The prevalence of elevated rates of antisocial behaviour has been estimated at 5% of the population (Church, 1996; Bretherton, 1997; 2000). At 5% prevalence per 1,000 students there would be 950 non-cases and 50 cases of students with elevated rates of antisocial behaviour. In relation to the Gate 1 findings and based on the above 5% prevalence per 1,000 student example, this would mean that the teachers in this current study would have nominated, at Gate 1, 101 student cases and there would be 840 non-cases. At Gate 2 there would be 50 cases plus the 101 nominated cases, making a total of 151 student cases. In this example, 840 student cases would not proceed to Gate 2. At Gate 2, teachers would only then need to complete the CSDS on the 151 students, saving them time and resources with not needing to complete the rating scale on the remaining 840 cases.

In summary, Gate 1 and Gate 2 were the most effective gates in terms of accuracy, time, and resourcing. The time it takes to complete the nomination form at Gate 1 is approximately 5 minutes and the CSDS takes approximately 10 minutes compared to 30-45 minutes plus training for Gate 3. Gate 1 and 2 are effective in their own right and from these findings Gate 3 is not necessary for the accurate identification of students at-risk of antisocial development.

5.9 Teacher Training Required

The time it took to train teachers to undertake the three step screening procedure varied. Gate 1 took approximately 15 minutes to outline the instructions, answer any questions and then an additional five minutes for the teachers to complete the nomination form for their class. For

Gate 2, after the instructions were provided, the teachers were very quick to complete the CSDS. In total, training took approximately 10 minutes, while completing the rating scale took 10 to 15 minutes per student. The direct observation at Gate 3 took longer because training at this gate was done individually as a different number of practice opportunities were required for each of the 34 teachers. Training took anything from 20 minutes for a teacher who understood the requirements quickly and could show they could undertake the observation with 90% accuracy, to up to two hours for the teachers who required additional practice opportunities and feedback. The following section provides the teachers' responsiveness to the training procedures.

5.9.1. Gate 1: Responsiveness to the Student Nomination Phase. Forty-seven teachers completed the nomination form at Gate 1. Teachers reported the form was written in words which they could clearly understand and the procedure was one they could easily follow. Moreover, the teachers reported the definition of antisocial behaviour was clear in that they could, in a very short time, identify students in their kindergarten/classroom who either met or did not meet the specified definition. This task usually took five minutes for the whole class. A typical teacher response to this gate was "is that all I have to do". Seventeen of the 47 teachers required assistance with respect to selection of the control student. Of these teachers, six were kindergarten, nine were primary and two were intermediate teachers. Four of the primary teachers initially struggled when selecting the control student and selected their "best" student and had to be reminded of the instructions to select "the next on the roll after the nominated student". On another two occasions the author redirected another two teachers to the instruction manual to ensure they selected the same gender as the nominated student for the control student. A further issue arose with regard to students with special needs as 9 of the 17 teachers required

additional assistance with the nomination (or not) of a student with speech language difficulties or whether or not to include students with autism. To solve this problem, the teachers were redirected to the nomination form and the behaviour definition to see if their student met or did not meet this definition.

Gate 1 nominations were reflective of the ethnic composition of New Zealand students as 19% of the nominated student sample were Māori. This sample reflects the 22% of students which make up the total Māori student population and appears to indicate the behaviour definition at this gate was culturally inclusive of all students.

5.9.2 Gate 2: Responsiveness to the Rating Scale Phase. Forty teachers completed the CSDS at Gate 2 with no difficulty. These teachers appeared keen to complete the 30 items and completed this task in about 10 minutes per student with all items clearly marked. The teachers reported they found the scale items clear because they were written in a language and in a style which they understood.

5.9.3 Gate 3: Responsiveness to the Direct Observation Phase. Thirty-four teachers undertook the direct observations at Gate 3. In terms of *teacher willingness* to undertake the direct observations, Table 15 shows the teachers classroom experience differed: three teachers had been teaching for 1 or 2 years, six had been teaching between 3 to 9 years, and 25 teachers had 10 or more years teaching experience. Eleven teachers felt *obliged* to undertake the direct observation, 15 were *ok* or *happy* to do the observation and 8 were *keen* to complete the observations. The number of years teaching experience did not correspond with their willingness to undertake the direct observations (r = -.128). The gender of the teacher did not have an effect

on the number of years teaching (r = -.173), willingness to undertake the direct observations (r = .242) nor the assistance required with the direct observation (r= .287).

In terms of the amount of *assistance required*, 10 of the 34 teachers required *lots of assistance,* a further 11 teachers required *some assistance* while 13 teachers undertook Gate 3 *independently*. The 21 teachers who required *lots of, or some, assistance* were given additional training as to the way in which to complete the observations. There was a moderate relationship between teacher willingness and the assistance required with the direct observations (r = .594) and a low correlation between the number of years teaching and assistance required with the direct observations (r = -.279).

Table 15: *Teacher Demographics and Responsiveness Categories for the 34 Teachers who Completed Gate 3: Direct Observations*

Teacher Categories	Group Type & Teacher Number
Gender	Male = 3 Female = 31
Number of Years Teaching	<3 years = 3 3-9 years = 6 >10 years = 25
Teacher Willingness	Keen = 8 OK = 15 Obliged = 11
Assistance Required	Independent = 13 Some = 11 Lots =10

Total number of teachers at Gate 3 = 34

There were a number of characteristics which distinguished the independent group from the group which required additional assistance with the direct observations. All the 34 teachers reported workload difficulties and they all reported being busy not only with daily curriculum demands but also with school demands, such as organisation and supervision of school photographs, school assemblies, sports day, swimming, choir activities and day excursions. These activities all interrupted their teaching and preparation time. Three of six kindergarten teachers (T1, T3, T5) were head teachers and two of the primary teachers (T38, T40) were teaching principals. These staff all had additional responsibilities and high administration workloads in addition to their teaching workload. Besides these differences, there were also a number of differences between the independent group and the group that required additional assistance with their direct observations.

Independent Group. The 13 teachers who were independent with their direct observations, "just got it". This group made up 38% of the teachers who participated at Gate 3 (9 primary and 4 intermediate level teachers). They read the training manual and were able to follow all the instructions as intended. Any questions that were asked related to the best time to take the observations. After a discussion about their timetable, they "just got on with it" and then emailed the author to request a reliability check. These teachers were very prepared, welcomed the author into the class and always had extra observation sheets ready. Observations always began and finished on time and did not interrupt the daily routine of the class or lesson. These 13 teachers reported they saw value for themselves in volunteering for the study because they wanted to develop their skills in behaviour observation and they wanted to help develop this type of research in New Zealand. Moreover, they were motivated to be part of the project because

they themselves had struggled to find behaviour screening/assessments which were accessible, not too time consuming and of a type which they could complete.

Six of these 13 teachers (T10, T11, T19, T34, T40, T45), one of whom was a teaching principal (T40), reported that learning to do the three step process (Gates 1, 2 and 3) helped them to identify other students in their school or class who might be in need of assistance with their behaviour, or who might need a referral for RTLB, or who might generate a need to source Ministry of Education Special Education funding.

Lots of Assistance and the Some Assistance Groups. Twenty-one of the 34 teachers required lots or some assistance with the Gate 3 observations. The 10 teachers who required lots of assistance comprised 6 kindergarten, 2 primary and 2 intermediate teachers. There were a further 11 teachers who required some assistance with the procedure: one intermediate and 10 primary teachers, five of whom came from the same school.

For the direct observations, all of these 21 teachers required structured feedback on the practice observations. Those who needed lots of assistance, required on average, three or four additional practices while the some assistance group required one or two additional practices before they reached the 90 percent agreement criterion for accuracy. For both these groups, difficulties arose when selecting the correct definition on the observation recording form for coding instructions given to the class, and/or not recognising if they were expecting compliance from the instructions they had given. For example, they did not recognise that a "signal" included clapping their hands for the class to be quiet. Time was also spent carefully going over each of the definitions with additional examples provided from their classroom or kindergarten teaching repertoire. A number of suggestions were also required as to where to place their clipboards with the observation form and how best to use it. In some instances, for both

kindergarten and primary teachers, this was modelled by the researcher. Two of the teachers in the some assistance group (T20, T24) were uncomfortable with the researcher taking simultaneous observations with them and they did not solicit feedback, whereas the other 19 teachers wanted as much feedback as possible to help them get it right. This proved to be time consuming but the researcher considered this was not only a valuable opportunity for their professional development but also as a way of saying "thank you" for their interest and participation. Five teachers, two kindergarten (T1, T4), one primary (T17) and two intermediate (T39, T47) from the lots of assistance group required continuing prompts to follow all the instructions correctly. Of the 34 teachers who completed all the steps competently, two (T24, T39) commented that they were not all that interested but "felt they had to do it" because of their principal's expectations.

There were a number of impediments teachers identified when undertaking the direct observation procedure. These included:

1. Workload difficulties. The teachers' reasons for struggling with the direct observation procedure included such things as not being able to make additional time in their timetable to learn how to do the direct observations, planning time during the lesson to take the observations, curriculum requirements taking precedence over their planned direct observation time and other student's behaviour interfering with observation times. Five teachers (T3, T20, T24, T31, T39) said that the three gates were "more paperwork and another task on top of an already busy and heavy workload".

Even though most of the teachers planned specific times for the observations, sometimes other things, such as responding to a student who was engaging in antisocial behaviour, or to

requests for administration tasks took precedence. As a consequence, the observations were postponed for another time and/or day.

2. Teacher early withdrawal. The 13 teachers who withdrew from the study all cited workload issues and daily pressure as their reason for withdrawal. Seven teachers only completed Gate 1. Six teachers completed Gates 1 and 2 only. Three teachers (T12, T13, T15) who completed Gates 1 and 2 reported that "the senior management team didn't understand the pressure at the classroom level – at the day-to-day level and [the teacher] didn't see the point of the screening procedure as nothing would get done anyway". They went onto say that parenting and the home situation was the problem and nothing they did would change the child's behaviour. Teacher 18 didn't complete Gate 2 and reported she had too many daily pressures and was finding it too difficult to manage the behaviour problems she had in her class. At that time, undertaking the three-gates was just too much for her. From one school, four of the six volunteer teachers completed Gates 1 and 2 and then withdrew. One of those teachers (T14) reported that she couldn't undertake the third gate because she was too busy with parent inquiries, responding to student behaviour, and the general running of the school. Teacher 15 could not follow the third gate instructions accurately and attempted one observation but then refused to do the remaining two observations. This teacher reported being overworked, had a difficult class and commented that they did not have time to do the three 10 minute observations. This was despite the researcher spending time with them in the staff room and also in the classroom mentoring and providing four practice opportunities with direct feedback on the observations. This teacher said that the expectations were too high. Another teacher (T13) reported she was "too busy and too full on with kids" to complete the three gates. This teacher undertook one practice session and wanted feedback on what was "good". She carried out the

practice observations with skill and understood the requirements but appeared not willing to put the time in to do the three observations. Four times were made with the author to undertake a reliability check and each time she was out of the classroom.

At the same school another teacher (T12) also completed the nomination form and rating scales and attempted the direct observations twice at the morning mat-time but could not do this successfully because she said that "the small children demand my attention all the time" so she could not manage to "write and teach at the same time". This was despite practising the recordings twice in the classroom with the author. She also said that she had too many children and multi-tasking was hard. She had a roll of 13 children.

Another four teachers completed Gate 1, did not undertake Gate 2, but did one or two observations at Gate 3 (T35, T42, T43, T44). With the exception of one teacher (T35), three of these teachers were all graduate teachers in their first teaching position. They reported they were very busy "learning the job" but wanted to participate because they felt the project was important and wanted to learn more about behavioural screening. They also identified a lack of time and the pressures of the job as their reasons for their withdrawal.

In summary, the three gate screening procedure was effective in identifying those students at-risk of antisocial development but it was Gate 1 and Gate 2 which were the most effective. The psychometric properties of the screening procedure were very sound showing excellent or good sensitivity, specificity and accuracy but Gates 1 and 2 were the most effective in terms of accuracy, time and resourcing. Teachers were trained in a very short time to undertake this procedure which most of them completed with ease. The screening observations did not unduly interrupt the daily routine of the class or teaching lesson but the teachers who did withdraw did

so because of workload issues. The implications of these findings are now discussed in the following chapter.

CHAPTER 6: DISCUSSION

6.0 Introduction

The research in this thesis has been guided by three questions. The first asked what changes are needed to be made to the three-gate screening procedure, developed in 2006 by Church et al. to develop a psychometrically sound screening procedure for students at-risk of antisocial development. The second question was to determine if the third gate, that of direct observation, is necessary for the accurate identification of antisocial development in young children, and the third question asked if such a procedure could be adapted for use by classroom teachers in New Zealand early childhood and primary school settings.

In terms of the first research question, this study found that the Church et al. (2006) screening procedure for Gates 1 and 2 could be successfully replicated across kindergarten and Years 1-8 students in New Zealand and that very little change to the Gate 1 and 2 procedures were necessary to produce psychometrically sound results. This study successfully developed a third gate direct observation procedure which 34 teachers used during their daily lessons to record student responses to their compliance instructions. Gate 3 also produced psychometrically sound results although the results from Gates 1 and 2 results were stronger. Gate 3 is not to be dismissed as this gate also produced valuable information about the nominated and control student's compliance and non-compliance behaviour. The teachers' response to the three gate procedure varied from being very enthusiastic to withdrawing after completing the first gate because of workload pressures. The implications of these findings are now discussed.

6.1 Changes to the Church et al. (2006) Three Gate Procedure

From the Church et al. (2006) study, there were some minor changes made to Gate 1, no changes to Gate 2 but considerable changes were made to Gate 3. The changes to the procedures are discussed as follows.

6.1.1 Gate 1: The Nomination Procedure. As Walker et al. (2014) report, Gate 1 is the most important screening stage of the multiple gating procedure and nominations are highly dependent on teacher judgement and their understanding of student behavioural characteristics. The results of this study strongly support this statement. With the exception of adding six most Frequently Asked Questions and Answers to the back of the nomination form, this gate was very effective in doing what it was designed to do, that is, requesting teachers to nominate students in their class which meet a predetermined definition of antisocial behaviour.

An advantage of the Gate 1 nomination process was that it drew to the attention of teachers those students who did not comply with their instructions. The teachers' initial perception of this gate was to identify just those students who engaged in overt antisocial behaviour. Three teachers, T16, T38, and T45 reported Gate 1 "opened my eyes to all those kids who just sit there and do nothing". These teachers were then very keen to complete the CSDS as they wanted to see how their nomination and control students would score. With the exception of one class of 13 students with three nominations and another class of 18 students with two nominations, all other classes had approximately 30 students. Class size did not appear to affect the number of students nominated as teachers mostly nominated only one or two students.

The nomination procedure worked very well as the teachers correctly identified the students at-risk of antisocial development with the eight false positive students all picked up at the remaining gates. No changes in the procedures are recommended for Gate 1. Although Gate

1 proved a simple process for the teachers to undertake, it did not check for personal bias or inform teachers of the social behaviours the nominated students were missing, nor did it inform the extent of the elevated rate of non-compliance or antisocial behaviours engaged in.

6.1.2 Gate 2: Canterbury Social Development Scale (CSDS). Like the teachers in the Church et al. (2006) study, the teachers in this current study completed the CSDS with no difficulty. These teachers appeared keen to complete the 30 items and completed this task in about 10 minutes per student with all items clearly marked. The 40 teachers who completed the CSDS all reported they found the scale items clear because they were written in language and in a style which they understood.

Psychometrically, the cut-off point of 112 on the CSDS resulted in a near perfect *area under the curve* (AUC) score of .996, which indicates this gate worked exceptionally well in identifying those students at-risk and those students not-at-risk of antisocial development. This result meets the recommended sensitivity and specificity recommendations for excellence (Cicchetti et al., 1995; Walker et al., 2014). Moreover, with the 112 cut-off point, the cost and benefits of the identified false negatives and false positives were balanced at very low numbers of two students each. False negatives are those students who are not identified by the screening procedure but who are at risk and if not identified early then the long-term outcomes for these students is poor in terms of their increased negative interaction with education, health, justice, and social welfare agencies. The cost of a false positive is the time and cost of another assessment. In terms of time and resourcing, additional screening would not be expensive nor too time consuming if using a gating procedure such as the one described in this study. Likewise, the small number of identified false positive students would not add undue pressure to

an already full RTLB and Educational Psychologists waiting list or cause undue worry for their teachers as the small number appears manageable in a classroom setting.

These results cannot be directly compared to the Church et al. (2006) results because the current study did not have enough participants at each age group to make Year Group comparisons. As a comparison, however, the Church et al. CSDS cut off point of 114 for kindergarten students, 105 for Year 1 to 4 students and 111 for Year 5 to 8 students were all in the range of this current study's 112 cut-off point. An explanation for this similarity could be that the 30 items in the CSDS, used in both studies, were carefully examined by the Teacher and Cultural Reference Groups (Tyler-Merrick et al., 2006) in terms of reflecting *teacher speak* language, item acceptability at each Year group level and cultural acceptability of each item. In interpreting these results, however, Pesco and O'Neill (2012) point out that one must be mindful that the cut-off points and the values stemming from these points, that is, the sensitivity and specificity, are sample specific. If both studies were replicated or if the sampling strategy altered, a different cut-off point may result and therefore different predictive values would result. In summary, the psychometric properties of Gate 2 were excellent so no changes at this gate are recommended.

6.1.3 Gate 3: Direct Observations. A number of changes from the Church et al. (2006) study were made to the Gate 3 direct observation gate for this current study. These included: (1) the teacher, not the researcher, undertook the observations; (2) the length of observation(s); (3) the recording format of the observation form; and (4) the behaviours observed.

Each of these changes worked very well. The teacher undertaking the observations eliminated Church et al.'s (2006) problem of observer bias and ensured "nothing changed in the

classroom environment" so the observation was an accurate recording of the student's typical classroom behaviour. By splitting the observations into three separate instruction times the teacher could select when to do the observations and therefore could manage this task within their already busy workload. Often a teacher would report "I have done two sheets (20 compliance instructions), only one more to go (to make 30 instructions)". In this manner teachers kept track of the number of instructions they were requested to do. During the design phase, it was thought that 10 instructions would take approximately 30 minutes to complete; however for almost all of the teachers 10 instructions occurred within a 10-15 minute period showing just how many compliance instructions teachers gave, and how many instructions students have to process and respond to, in a very short time period. After the observations, the teachers often stated they were not aware just how many instructions they gave in such a short amount of time.

The recording format worked very well as teachers just ticked or circled the codes provided. When writing their instructions, some teachers found "text" writing effective while others preferred to just write the main words – enough to give meaning to their instruction while others wrote a few instructions as they said them and then filled in the rest immediately after the observation. Another fundamental shift from the Church et al. (2006) study involved taking a frequency count of teacher instructions and a count of the difference responses from the nominated and control students rather than an interval recording. This shift in measurement appears to be unique to this current study. In keeping with trying to reduce teacher workload, teachers were only required to do a simple count of compliance and consequence responses so no calculation of interval percentages were required.

The coding definitions were the most difficult to develop because they needed to be explicit, easily interpreted, permit accurate and timely recording and for the teachers recording to be unambiguous. The teachers' understanding, however, of what constituted compliance instructions was mixed as some teachers initially could not discriminate between what was an actual compliance instruction and what was not. Most teachers understood what compliance meant and when to write their instructions on their observation form, but there were nine teachers who required an additional explanation and further examples so that they could undertake this task accurately. Confusion occurred between what was a general instruction such as explaining a concept or curriculum activity to that of compliance where the teacher expected students to respond to what they said.

Typically teachers followed a similar pattern when giving instructions. A whole class instruction was given once or twice, then approximately six or seven disciplinary instructions were given to the nominated student (although sometimes to the control student) then another whole class instruction followed by further instructions to the nominated student completed the observation. As the results indicate, teacher instruction and compliance with instructions was inversely related to avoidance behaviour. That is, if the student were not complying with the instruction(s) then they more often than not engaged in avoidance behaviour.

All of the teachers who completed the third gate timetabled their observations in their daily calendar as they were then more likely to do them and not forget. Occasionally when something interrupted their timetable they just rescheduled their observation to the afternoon or to the next day. The teachers enjoyed seeing their instructions written down and this provided immediate feedback on what they said and how the nominated and control students responded to their instruction. Some of the teachers were genuinely surprised with their observations and later used

the observation form as a professional development opportunity to refine and be more explicit in their instructions and follow-up of individual students.

In terms of the number of compliance instructions provided, 21 teachers reported that on viewing their completed observation forms they were shocked to see how many times they interacted with the nominated student compared to the control student. They reported they "just did not realise they spent so much time with one student". A further eight teachers reported the three short observations confirmed to them that the nominated student took up "too much of their time" but they still didn't realise just how much time they did spend with that student.

The teachers were also very surprised to see the number and range or the limited number/range of their instructions because they did not realise they gave so many different forms of instruction. The observation form highlighted to them their actual teaching practice and after the observations they were very keen to discuss with the author how they could give fewer or clearer instructions with the aim of increasing student compliance.

The 10 second wait time for compliance worked extremely well. The teachers reported they could count "in their head" 10 seconds and this did not interrupt teaching time. Several teachers commented that "10 seconds is actually a long time". This result suggests that the 10 second compliance code appeared to work well and was a realistic wait-time for a response to a compliance instruction to occur across the different year groups.

Classroom instructions were the most commonly recorded instruction type and the teachers could discern between the different instruction types except that some teachers during the practice sessions got confused with what was the "teacher look". This was the most commonly recorded *signal* with the kindergarten and junior school teachers not realising that when they gave the "teacher look" they expected compliance. These teachers also did not realise that their

signal of "clapping" or "hands on head" were also instructions for student compliance. Additional practice sessions rectified this problem.

That there were only a small number of defiance codes worked well for all teachers. They reported they could memorise the five codes easily and that there was no ambiguity as to which code to circle. It may have helped that during the training and practice sessions/feedback, the author ensured there were additional examples and non-examples of behaviours for each of these codes. The teachers particularly liked the "avoidance" code even though they initially had not viewed avoidance as antisocial behaviour. They perceived that if students were not doing what was requested, then they were "mucking around" but they did not view this avoidance behaviour as non-compliance. Once the author provided an explanation as to why avoidance was included in the defiance category, and provided a number of examples and non-examples, teachers then realised why avoidance was classified in the defiance code section and were happy to record it as such.

Antisocial behaviour occurred at low levels with the exception of four male and two female nominated students who engaged in antisocial behaviour ranging between five to nine occurrences over the 30 compliance instructions. These students missed very valuable learning opportunities but without intervention, the long term outcome for these six students could be very bleak.

During the piloting of the observation form kindergarten teachers found recording the two students behaviours difficult; they could not teach and record at the same time. A "rule" was developed so that the second teacher would record while the "lead teacher" taught but if they, or the third teacher, gave a compliance instruction, the teacher who gave the instruction would record their instruction. Interestingly, during the study it was only the "lead teacher" who gave

compliance instructions. An explanation for this could be that the other teachers were aware of the "rule" and were very careful not to provide compliance instructions but it was more likely that during mat/circle times there were a number of compliance instructions given in a short time, such as when the students were coming and settling on the mat, so the observation was over quite quickly, sometimes within 10 minutes. In this manner, the other teachers did not have to give instructions to the nominated or control students.

Psychometrically, the third gate behavioural measures worked very well with strong sensitivity, specificity and AUC scores for both compliance and avoidance. While not as psychometrically strong as Gates 1 and 2, the psychometric properties for compliance and avoidance were still strong and met the criteria set by Cicchetti et al. (1995) as good. This gate did what it was designed to do, in that, it identified those students at-risk and those not at-risk of antisocial development and, as important, it provided information to the teacher on their teaching strategies and information on the student's consequence responses to their instructions. Both forms of information are important especially when determining the function of the student's behaviour and, to the teacher; help inform them of the antecedents which elicited the non-compliance. Both forms of information will help inform a resulting intervention plan.

Collectively, the psychometric properties of all three gates provide preliminary, yet compelling evidence to suggest this simple teacher operated screening procedure can identify those students at-risk of antisocial development. Gates 1 and Gate 2 provide the most compelling evidence but Gate 3 compliance and avoidance scores are also psychometrically sound and should not be discounted. The development of this gate appears to be successful and provides evidence that this small group of teachers could successfully undertake a Gate 3 direct observation(s) in their classrooms while they were teaching.

6.2 The Question of the Third Gate.

The second research question asks if direct observations at the third gate are necessary for the accurate identification of students at-risk of antisocial development. The results of this study indicate direct observations may not be necessary as Gates 1 and 2 detected students at-risk of antisocial development with sound accuracy, thus appearing to eliminate the need for the third gate.

This finding is in line with Nelson et al. (2008) who argue Gates 1 and 2 have been shown to be very reliable on their own. Caldarella et al. (2008), Cheney et al. (2009), Tsai and Cheney (2012), B. Walker et al. (2005) and Young et al. (2010) also argue that students who pass through the second gate (using the SSBD) were considered to be at least at a moderate risk for social, behavioural and academic failure, hence there was no need to screen further because these students were already eligible for an intervention programme.

The findings clearly show Gates 1 and 2 were effective as teachers at Gate 1 were very accurate in their nomination judgements, suggesting that only those students nominated would need to have a rating scale (CSDS) completed at Gate 2. This simple act would reduce teacher workload and may even encourage teachers to undertake regular behaviour screening making this two-gate screening procedure time and resource efficient.

6.2.1 The Value of the Third Gate. One cannot completely rule out the value of teachers undertaking the third gate observation in their classrooms for five reasons. First, the direct observations in this study were structured in such a way that they assisted teachers to distinguish between those students who comply with instruction and those who do not. This was particularly noticeable when students engaged in avoidance behaviour. Previous to starting, the teachers

reported they were reactive to their students' antisocial behaviour but after undertaking the observations they could now see those students who were not attending to their instruction.

Second, while these observations cannot be used to determine if the response is a function of other causes such as a recent traumatic event, bullying or an environmental trigger they do indicate if academic work is too difficult or too boring. From the observation findings, the teacher could then initiate an intervention programme suitable to the academic level of the student.

Third, the direct observations locate the student's antisocial behaviour within their social environment and it is this environment that needs to be adapted or adjusted to meet the student's needs. Of course, to determine if the antisocial behaviour is a response to other variables, a full functional assessment would need to be undertaken but this would occur anyway if the student graduated to Gate 3.

Fourth, one question that has not been addressed in the behavioural literature, and is worthy of discussion, is that the findings of this study indicate a collusion/complicit agreement between the teacher and the nominated or control student(s) for the acceptance and continuance of avoidance behaviour in the classroom. As stated earlier, teachers repeated their instruction sometimes up to six or seven times to the nominated student and sometimes also to the control student, but there were no consequences for the avoidance behaviour. The student just continued to ignore the instruction and carried on with what they were doing and, in response; the teacher ignored the student and continued with their teaching. Another form of avoidance was that the student looked as if they were complying with the instruction when in fact they were not. For example, they would get up from their desk to sharpen their pencil, or get a reference book, or ask a peer a question; they never actually complied with their teacher's instruction and there

were no consequences for this behaviour either. When discussing these particular students with the teachers after the observation period, without exception, it was these students who struggled academically. The teachers did not appear to understand the "reinforcement trap" they had created for themselves (Patterson, 1982; 2002). Teachers were negatively reinforced by the quietness of the student and could continue their teaching while the students were negatively reinforced by avoiding/escaping the teacher's instructions. This overall pattern was prominent and observed in almost all classrooms. This complicit relationship appeared very acceptable to both parties and it appeared the teachers were either unaware of the reinforcement trap they had created for themselves or, if they were, they did not know how to address it, or want to address it, or did not have the time to address it. The short-term consequence of ignoring avoidance behaviour is that these students are placed at greater risk of getting further and further behind in their learning (and socialisation process) and the long-term outcome is bleak because it is these students who fail academically, disengage with school, leave school early and then have difficulty finding employment (Granic & Patterson, 2006; Jakobsen et al., 2012; Patterson & Yoerger, 2002).

Five, interestingly, non-compliance to teacher instruction did not result in high rates of hitting, fighting or stealing as Granic and Patterson (2006) found. It appears in this small study, antisocial behaviour, as defined by the Gate 3 measures, did not appear to be a major concern in the classroom.

Despite the sound psychometric findings of Gate 3, the question of whether direct observations are required (or not) still remains unanswered because data on antecedents and consequences is an essential first step in any FBA aimed at identifying the causes of student misbehaviour. These data are also essential in distinguishing between students who are, and who

are not, at-risk of antisocial development and the adverse outcomes which lie at the end of that developmental trajectory. Only direct observations can tell the teacher (and parents) whether the student is receiving more positive and negative reinforcement for antisocial responses (in demand situations) than for prosocial responses in these situations. As there are degrees of antisocial behaviour, the question must be asked; do these students have a problem, or is this a teacher problem? Ratings scales on their own will not give this information, only an FBA will ascertain if these students are at-risk of antisocial development or not, hence the need for the third gate. In addition, direct observations focus on an individual child (as do rating scales) but it is the direct observations that record behaviour directly with a lower amount of bias and filtering of information. Direct observations are also required so teacher bias does not occur as it could at Gates 1 and 2.

There are a number of implications if schools and teachers do not implement the third gate. Direct observations have to be done at some point in time and it is only a matter of timing as to when and how this is done, so it would seem to make better sense to complete the nomination, rating scale, and direct observations as soon as possible so that the teacher can have a sound understanding of what is driving the student's antisocial behaviour and what they can do to plan and implement a suitable intervention. Direct observations are also sensitive to ecological variables such as situation-dependent interactions and physical settings. Both kinds of data are important to understand behavioural difficulties with their socially dependent nature. Most importantly, this information is necessary as it is used to examine which students antisocial and social behaviours are positively reinforced or negatively reinforced as the intervention plan is different for each. Intervention plans based on the function of the behaviour may then be developed from these findings (Umbreit et al., 2007). A function-based intervention plan not

only gives the student a positive start but it also means that the teacher can get on with the job of teaching (rather than just responding to misbehaviour) and the trap of a "one intervention applies to all" is eliminated because the intervention programme is individualised.

Not all students on an antisocial trajectory engage in overt antisocial behaviour. Indeed, as this current study shows a large number of the students engaged in avoidance behaviour. The teacher needs to know why the student is not following their instructions. It could be as simple as not understanding what is required or that the student is stuck on an aspect of the task required. It will only be by directly observing the student that the teacher will begin to understand the function of this behaviour. The teacher's response could be as simple as a Response to Intervention (RTI) Tier I intervention or implementing an intervention specifically designed to address avoidance behaviour.

In summary, while Gates1 and 2 were the strongest gates psychometrically, just completing a nomination form and a rating scale on its own does not provide the teacher with the type of information required to address effectively a student's antisocial behaviour. Undertaking a simple direct observation will help provide this important information so an effective intervention plan can be developed.

6.3 Teachers Use of the Three-Step Procedure in their Classroom

The finding that teachers accurately identified students at-risk of antisocial development cannot be over-emphasised. The results of this study support the findings of Lane, Barton-Arwood et al. (2007) who found that teachers are knowledgeable about children's development and can judge student behaviour and performance as was shown by the Gate 1 findings. Similarly, Church et al. (2006), Gresham et al. (2007a), Lane (2003), Oakes et al. (2010), and

Severson et al. (2007) also found teachers to be highly accurate in identifying students who engage, and those who do not engage, in persistent antisocial behaviour. It appears from these findings, teachers are an under-utilised resource for undertaking behavioural screening in kindergartens and schools.

6.3.1 Cost effectiveness. The three-gate multiple gating behavioural screening procedure was shown to be very cost effective. The 34 teachers in this study showed that, after a short amount of training, they could with competence, complete the screening procedure within 45-60 minutes and this did not impede on classroom routines or schedules. These findings support the findings of Church et al. (2006) and Walker et al. (1988) who also found the multiple gating procedure to be cost effective in terms of teacher time and resources. Moreover, the teachers in this study reported they found the procedures easy to follow and mostly easy to implement.

6.3.2 Timing of Screening. Young children require regular monitoring as some of their antisocial behaviour will be developmental and they will grow out of it but some students may not and it is these students who require regular monitoring because these children are the long-term cost to society. Because teachers see their students every day it stands to reason they are in the best position to undertake regular behaviour screening. The teachers in this study showed the time it took, post-training, to implement the three gate procedure was minimal. This finding implies that with planning, teachers could timetable behaviour screening into their work diary. This task should not be too onerous if done bi-annually as Lane et al. (2003) and Lane et al. (2014) recommend or tri-annually as Walker et al. (2014) recommend and, it is undertaken at a time when academic screening is done. In this manner, students can be tracked across year

levels (and for transient families, across schools) so that no student is "lost in the system". With regular screening, especially if schools follow the RTI model, evidence-based interventions /supports can be put in place very quickly. If teachers have too high a workload then the school Resource Teacher: Learning and Behaviour (RTLB) or the school Special Educational Needs Coordinator could be requested to undertake this screening for them.

6.3.3 Inter-Agency Collaboration. The Advisory Group on Conduct Problems (AGCP) called for greater inter-agency collaboration and consistency in screening students for behaviour problems. Ideally, this means one standardised screening procedure for education, health, justice and social welfare agencies. For government and non-government organisations to work together and share expertise these agencies should use the same screening procedure so that they can use the same terminology, talk the same language, and have the resources to respond across agencies when students are identified as at-risk of antisocial development. In light of this situation, a simple two or three-step screening procedure such as the one developed in this study could be used over a number of agencies. Ideally, as identified by some of the teachers in this study, there would also need to be services and resources available for those identified as requiring an intervention otherwise screening would be wasted. For such sharing of services and resources, as both Chafouleas, Volpe et al. (2010) and the AGCP (2013) recommend, there needs to be a comprehensive and coordinated system of service delivery developed across agencies.

6.3.4 Issues with Behavioural Screening in Schools and Kindergartens. The literature on the developmental trajectory, both social and antisocial, is well documented and understood. This work has been guided by scientific principles and is well understood by those in the

psychology field. Unfortunately, in New Zealand this work is not so well understood in the education sector. Children are required by law to attend school at 5 years of age (but not kindergarten) so this places teachers in a very important position to identify students at-risk of antisocial development at a very young age and halt this developmental pathway. At present, teachers cannot do this. This is not because teachers do not recognise the need to address antisocial, avoidance or non- compliant behaviour or that they are apathetic, it is because (1), they do not have the tools to do this and (2), there appears to be a lack of knowledge, time and school-wide systems in place to address the problem. New Zealand kindergartens and schools face the same problem – teachers are not trained to undertake behaviour screening and they are not trained to know what to do with such students once they are identified as at-risk of antisocial development.

For schools and kindergarten to undertake systematic behavioural screening there are three main issues which need to be overcome: pre-service teacher training, teacher buy-in and teacher workload, and resourcing for teacher professional development.

6.3.5 Pre-Service Teacher Training. Currently, as Church (2012) and Stichter et al. (2000) describe, pre-service teachers do not receive any training in behavioural screening, assessment or evidence-based behavioural interventions. In New Zealand, this is despite the New Zealand Teachers Council mandating classroom behaviour management skills be taught within under-graduate teaching degrees. The only explanation for this dearth of knowledge is that the education sector is slow or reluctant to respond to the evidence in this field, or as was suggested to the author, behavioural screening and intervention does not fit with the pedagogy of the training institutions. With this situation, it is up to school leaders to address this lack of

knowledge in their graduate teacher skill base especially in the theoretical framework underpinning behavioural screening, assessment and intervention. In the current situation, it is *hit and miss* until this gap in knowledge is filled.

6.3.6 Teacher Buy-in and Teacher Workload. There was a very positive response from principals and teachers to participate in this study. Initially, teacher buy-in did not appear to be a problem but at the completion of Gate 1, it became apparent that a group of nine teachers only participated because of expectations placed on them by their principal. Only three of these teachers completed the three gates. A busy workload was the reported reason why the 13 teachers withdrew after Gates 1 and 2. They reported they could not make the time, nor had the physical energy to commit to progressing to the further gates. Of these teachers, four were graduate teachers who reported they were still struggling to learn the craft of teaching and to get through their daily workload. Because they did not have any knowledge of behaviour screening they found adding the three gate procedure to their already busy day was too much so they withdrew from the study. These teachers were very enthusiastic and they could see benefit to themselves and to their students in participating: withdrawal from the study was solely related to competing work pressures. All 13 teachers reported that something would need to be removed from their already busy workload before they could undertake yet another task and because nothing was removed, they withdrew.

As Oates et al. (2010) reported teacher buy-in is critically important before any behavioural screening can be undertaken no matter how easy the procedure is to implement. If school leaders do not put time and resourcing into professional development, teachers will revert back to expecting someone else to take care of this problem or as four experienced teachers from

School 1 reported “its (the three-gate screening procedure) a waste of time, whatever we do doesn’t matter as we can’t change the family – they are to blame”. These four teachers perceived the screening procedure as just another job on top of all the other jobs they had to do in their already busy timetable. They commented that no-one (meaning their principal) removed tasks in order for them to do new tasks. In consideration of these factors, one can see that teachers would be very happy to pass the task of behaviour screening, assessment and intervention to the domain of specialists. As a consequence, school leaders must take into account current teacher workload but they must also find a way forward so that *all* students can be screened and only then will it be known how many students actually require early intervention. If not, the outcome for teachers, parents/ whānau and students is very bleak.

6.3.7 Teacher Professional Development Resourcing. The resourcing of teacher professional development is problematic and as suggested above, there are many competing areas in the curriculum which require additional resourcing and professional development. However, teaching cannot occur if the class is not managed well. To manage a class well, professional development should occur so that teachers learn why behaviour screening is important and also to learn the mechanisms at the route of the antisocial and prosocial developmental trajectory. This professional development is important because then teachers can identify those students at-risk (and not-at-risk) of antisocial development and have the knowledge and skills not only to screen but also to change the mechanisms operating in the classroom and develop and implement intervention plans. If teachers want or require more in-depth FBA training then successful models are available as Chapter 2 shows. To learn FBA and/or intervention strategies, approximately four hours appears to be the most effective training

time; this should be well within the school professional development budget and the training can be easily done on-site at the school (for example see Loman & Horner, 2013). In New Zealand, training in behaviour screening and the subsequent intervention programme in schools and kindergartens appears to be conducted on an *ad hoc* basis. Even though the Ministry of Education has made considerable progress with the implementation of the Positive Behaviour for Learning (PB4L) policy and provides resourcing and training to approximately 580 schools to implement behavioural assessment and intervention training, there is no training in this model for universal behaviour screening procedures. As a consequence it appears students still receive intervention support via the *wait to fail* model. Consideration, perhaps, should be given to a whole country roll-out so that teachers in all schools have the opportunity to learn the same skills at the same time; only then will behaviour screening occur consistently across all schools and kindergartens.

It is only through the on-going commitment of school leaders to provide professional development to their teachers that teachers will gain the knowledge and skills to identify and teach students at-risk of antisocial development (including avoidance behaviours). Moreover, teachers require sufficient practice in the skills to build fluency so that the skills they learn will be remembered and used in the future (Church, 2012). As important, and as most of the teachers in this present study report, until there are resources available to provide the behavioural interventions required for these students and their families/ whānau post screening, why waste time doing the screening?

6.4 Limitations

As with all research, there are limitations and in this study there is eight of note.

- The number of students at each year level was small and therefore the Year group analysis of the individual gates could not be completed. Ideally, for such an analysis to occur, significantly more students would have needed to have been recruited at each gate.
- The number of kindergartens available for participation was limited by the Head Office of their governing organisation. This may have limited the number of kindergartens which could have participated but also may have influenced the data in that this selection was not random, but selected by their governing body.
- Reliability measures at Gate 2 were limited to kindergarten and Years 7 and 8 students. This is one-third of the student cohort, as is standard practice (Cooper et al. 2007). It would have been ideal for all 134 students to have had reliability measures taken but the logistics of arranging a second teacher-rater for all 134 students proved too difficult for the busy teachers. This omission limited individual gate analysis and also limited the information on teacher reliability agreements/disagreements.
- The author undertook all the reliability checks at Gate 3. As a consequence, the possibility of observer bias must be taken into account.
- Given the large number of students who engaged in avoidance behaviour and who struggled academically, student academic scores for reading, writing and mathematics should have been recorded and matched against the nominated and control students Gate 2 and 3 results.
- This study did not use an external criteria for 'caseness' as the author used a self-developed independent measure as its At-Risk Criterion. Ideally, an external "gold standard" measure such as the SSBD should have been used or at the very least, a follow-up study should have been taken one year later.

- From the 47 volunteer teachers only 34 completed the three step procedure. This low retention rate is not unique as Oates et al. (2010) also found issues relating to teacher retention and competing expectations when working in the school environment but this low retention rate was a limitation of the study.
- Lastly, this study was a small study so the findings cannot be generalised to other kindergartens or schools.

Taking into account the acknowledged limitations further validation of the three-gate screening procedure is required.

6.5 Future Research

There are four identified areas of future research. First, because of the absence of follow-up data, it is not known from this study whether the false positives and the false negatives were accurately identified. Comment can only be made on the criterion-referenced validity of the three-step procedure and not of its predictive validity. Future longitudinal studies could help determine the predictive validity of the three-gate procedure. Second, future studies could examine why teacher retention is so difficult to maintain and ask if this is a workload issue, a skill base issue, or is it something else? These questions are important because even if the most 'perfect' screening procedure were developed, it is still the teachers which need to complete the screening but without their 'buy-in' this screening will not be done. Third, the gold standard of behavioural screening, the SSBD (Walker & Severson, 1992a) uses both externalising and internalising criteria at gate 1 nomination and places a limit of six students for each form. An argument could be made not to limit the number of students selected at gate 1 because, as was shown in this study, some teachers nominated more than six students and they did this with

accuracy. A future study could examine the costs and benefits of the current study's gate 1 nomination form to that of the SSBD nomination procedure. Lastly, accurately identifying the prevalence of antisocial behaviour is still unanswered. Eighteen years have passed since the Church (1996) prevalence study was conducted in New Zealand and it would appear timely to repeat this prevalence study because teachers, through the media, are consistently reporting that the frequency and intensity of students' antisocial behaviour has increased over this time. Accurately identifying the number of students involved in persistent antisocial behaviour would greatly assist with the resourcing of behaviour screening and intervention programmes.

6.6 Conclusions

The current study made several important findings. Very few changes from the Church, Tyler-Merrick and Hayward (2006) study were required at Gates 1 and 2 but Gate 3 was completely redeveloped to provide a procedure where teachers undertook a self-recording of 30 compliance instructions to a nominated and control student during a teaching lesson. The three gates produced very sound psychometric results but it was Gate 1 teacher nominations and the Gate 2 rating scale, the CSDS, which produced the most accurate results. This, however, does not negate the importance of Gate 3 because these observations will still be required to confirm the function of the antisocial behaviour. This is very important as it is the function of the behaviour which informs the resulting intervention programme.

This study showed that Gate 1 and Gate 2 can be undertaken very quickly by the classroom teacher, at very little cost and with very little training. This finding is important because teachers can then screen all students in their class and need only to complete Gates 1 and 2 for accuracy.

This action would save teacher time and resources and would appear "do-able" in their already busy workloads.

That 72% of teachers who volunteered for the study learned to use a three-gate behaviour screening procedure in a short space of time and with a high degree of accuracy is important. This suggests teachers have the competency to undertake a simple screening procedure during their normal busy working day and that they can identify students at-risk of antisocial development.

The screening procedure appears suitable for classroom use as it only takes 45-60 minutes to collect the data required for all three gates. The procedure did not disrupt classroom schedules or routines unduly and nor did it require extensive technical support to implement.

There appears to be a compelling case for pre-service teacher training providers and school leaders to invest in professional development so that teachers can learn the skills of behaviour screening (as well as assessment and intervention programmes). Equally important, is the need for teachers to learn about the mechanisms which drive antisocial development. With these elements in place, teachers could help prevent long-term negative outcomes for the 5% of students which are at-risk of developing along an antisocial trajectory.

The screening procedure could act as a preventative tool, that is, as an RTI Tier 1 screening procedure. This action is two-fold. First, it could provide kindergartens and schools information regarding the number of students who are in need of further assessment and additional resourcing and second, intervention strategies could be quickly implemented in the classroom before antisocial behaviour escalates. Likewise, students could also be tracked across kindergartens and school year groups and, if transient across different schools.

Given the high rate of avoidance behaviour which was observed, a compelling case could be made for providing teachers with a universal behaviour screening procedure which could be completed alongside the regular academic assessments. It is difficult to envisage an area of expenditure which could conceivably generate a greater return on investment.

In summary, New Zealand kindergartens and schools do not use a universal behaviour screening procedure and as a result students continue to fall through the cracks as they are not identified early as requiring intervention. A small group of kindergarten and primary teachers were trained, and then successfully undertook a three-step screening procedure during their normal busy working day. Psychometrically, Gates 1 and 2 were the most accurate and they were the most time and resource efficient. Gate 3 did not add any psychometric value to the screening procedure but this does not diminish its importance because Gate 3 provides information regarding the function of the behaviour and this is needed when developing an intervention plan. The implication of the findings of this research is that teachers could, within a very short period of time, screen all students in their class without too much interruption to their already busy schedule and routines. Through regular screening these students could be identified early and with early intervention their antisocial pathway could be halted. This work is in its infancy in New Zealand and requires further validation but it is hoped this small study will add value to work undertaken in this field.

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LIST of APPENDICES

Appendix 1

Examples of Studies which Use a Two-Gate Multiple Gating Procedure.

	Participants Grade Level Total number (or number of sites)	Gate 1 Undertaken by Procedure used Nom criteria Total meeting criterion	Gate 2 Undertaken by Rating Scales used Total meeting criterion	Gate 3 Undertaken by Observation procedure	Purpose Research study or Intervention Programme
Benner, Nelson, Sanders, & Ralston (2012)	Kgtn to Grade 3 N = 13 schools	Teachers SSBD DSM-IV Top 10 externalising Not reported	Teachers CEI, ABS, MBS Top 3 externalising N = 129 N = 26 controls	Nil	School-wide positive behaviour support
Caldarella, Young, Richardson, Young, & Young (2008)	Grades 6 to 9 School 1: N = 1,072 School 2: N = 1,074	Teachers SSBD 5 externalising 5 internalising Top 3 externalising Top 3 internalising School 1: N = 232 School 2: N = 129	Teachers CEI, ABS,MBS, TRF, SSRS N = 123 School 1: N = 59 School 2: N = 64	Nil	School-wide positive behaviour support
Cheney, Blum, Walker (2004)	Kgtn to Grade 2 N= 2,000 N = 35 teachers	Teachers SSBD Top 3 externalising Top 3 internalising N = 2 controls N = 210 chn N= 140 controls	Teachers CEI, ABS, MBS BASC-2, SSRS, BERS N = 88 nom N = 63 controls N = 56 selected	Nil	Beacons Project

Cheney, Flower, & Templeton (2008)	Grades 1 to 3 N = 18 schools	Teachers SSBD Top 3 externalising Top 3 internalising Not reported	Teachers CEI, ABS, MBS N = 326 N = 127 met additional criteria	Nil	Check, Connect & Expect Programme
Cheney, Stage, Hawken, Lynass, Mielenz, & Waugh (2009)	Grade 1 to 3 N = 18 schools	Teachers SSBD Top 3 externalising Top 3 internalising Not reported	Teachers CEI, ABS, MBS N = 207	Nil	Check, Connect & Expect Programme
*Church, Tyler-Merrick, & Hayward (2006)	Kgtn to Year 10 3 kgtns 5 schools N = 2,134 N = teachers not reported	Teachers Own procedure N = 131 nominations N = 131 controls	Teachers CSDS, CEI (mod) N = 131 nominations N = 131 controls		Unpublished NZ Ministry of Education Pilot Study
Dowdy, Doane, Eklund, & Dever (2011)	Grade 1 to 7 N = 849 students N = 42 teachers	Teachers Authors own Meets definition N = 82 at risk N = 68 at high risk	Teachers BESS, ORD, N = 130 at risk N = 77 high risk	Nil	Comparison study between universal screening (Gate 1) and teachers nominations
Iovannone, Greenbaum, Wang, Kincaid, Dunlap, & Strain (2009)	Kgtn to Grade 8 N = 65 schools N = 218 teachers	Teachers SSBD Top 5 externalising Not reported	Teachers CEI, ABS, MBS, AET Top 3 externalising	Nil	Prevent, Teach, Reinforce Programme Limited to 1 child per teacher
Kalberg, Lane, & Menzies (2010)	Kgtn to Grade 5 Class 1: N = 31 Class 2: N = 14	Teachers SSBD Top 3 externalising Top 3 internalising Not reported Not reported	Teachers CEI, ABS, MBS, SRSS, TRF, CBM Class 1: N = 19 Class 2: N = 8	Nil	Prevent Project
Kamps, Kravits,	Kgtn to Grade 7	Teachers	Teachers	Nil	Behaviour and

Stolze, & Swaggart (1999)	N = 12 schools N = 26 teachers	Own definition 3-5 chn per class Not reported	CEI, ABS, MBS N = 28 chn N = 24 controls		reading intervention
Kwon, Kim, & Sheridan (2012)	Kgtn to Grade 3 N = 21 schools N = 82 teachers	Teachers SSBD Top 10 externalising N = 383	Teachers CEI, ABS, MBS, + item screener, BASC-2, WJ-III Top 5 externalising N = 284	Nil	Behaviour and writing intervention
Lane (2003)	Grade 1 N = 2 schools N = 6 teachers	Teachers SSBD Top 6 externalising N =40	Teachers SSRS, CEI, SARS, TOPA, WRMT-R N = 31 at risk N = 15 controls	Nil	Behaviour and reading intervention
Lane, Kalberg, Bruhn, Mahoney, & Driscoll (2008)	Kgtn to Grade 5 N = 2 schools N = 981	Teachers SSBD Top 3 externalising Top 3 internalising	Teachers CEI, ABS, MBS, SRSS School (1) (2) SSBD Externalising 2005 Fall 14 8 2006 16 6 Internalising 2005 17 4 2006 6 5 SRSS - High risk 2005 Fall 34 12 2006 26 9	Nil	Prevent Project
Lane, Kalberg, Lambert, Crnobori, & Bruhn (2010)	Kgtn to Grade 5 N = 5 schools N = 131 teachers N = 2,588 Over 3 screenings	Teachers SSBD Top 3 externalising Top 3 internalising Not reported	Teachers CEI, ABS, MBS, SRSS Not reported	Nil	SRSS & SSBD psychometric properties
Lane, Little, Casey,	Kgtn to Grade 2	Teachers	Teachers	Nil	SSBD & SRSS

Lambert, Wehby, Weisenbach, & Phillips (2009)	N = 7 schools N = 73 teachers N = 562	SSBD Top 3 externalising Top 3 internalising Not reported	CEI, ABS, MBS, SRSS Not reported			psychometric properties
Lane, Little, Menzies, Lambert, & Wehby (2010)	Kgtn to Grade 2 N = 7 schools N = 73 teachers N = 578	Teachers SSBD Top 3 externalising Top 3 internalising N = 196	Teachers CEI, ABS, MBS, SRSS, TRF N = 7	Nil		Prevent Project
Lane, Little, Redding-Rhodes, Phillips, & Welsh (2007)	Grade 1 N = 2 schools N = 2 teachers	Teachers SSBD Top 3 externalising Top 3 internalising Not reported	Teachers CEI, ABS, MBS, SRSS-T, TRF, WJ-III Not reported	Nil		Prevent Project Case study
Lane, Oates, Harris, Menzies, Cox, & Lambert (2012)	Kgtn to Grade 6 N = 4 schools N = 97 teachers N = 2,460	Teachers SSBD Top 3 externalising Top 3 internalising Not reported	Teachers CEI, ABS, MBS SRSS-IE (mod) SDQ Not reported	Nil		SSBD & SRSS psychometric properties
McConaughy, Kay, & Fitzgerald (1998)	Grade 1 N = 7 schools N = 13 teachers	Teachers SSBD Top 5 externalising Top 5 internalising N = 77	Teachers CEI, ABS, MBS N = 56	Teachers TRF N = 18 N = 18 controls		Social Skills intervention
McConaughy, Kay, & Fitzgerald (1999)	Kgtn to Grade 2 Cohort 1 = 7 schools Cohort 2 = 9 schools	Teachers SSBD Top 5 externalising Top 5 internalising Cohort 1 = 77 Cohort 2 = 112	Teachers CEI, ABS, MBS Cohort 1 = 56 Cohort 2 = 65	Teachers TRF Cohort 1 = 50 Cohort 2 = 58	Teachers SSBD & TRF score Cohort 1=36 Cohort 2 = 46	Social Skills intervention

Nelson, Stage, Trout, Duppong-Hurley, & Epstein (2008)	Kgtn & Grade 1 N = 10 schools	Teachers ESP & SSBD Not reported Not reported	Teachers ESP-CEI, ABS, SSBD –CEI, ABS, MBS N = 102 kgtn N = 101 Grade 1	Nil	Research project – identification of risk factors for behaviour and reading difficulties
Parks-Ennis, Lane, & Oakes (2011)	Kgtn to Grade 1 N = 1 school N = 498	Teachers SSBD Top 3 externalising Top 3 internalising Not reported	Teachers CEI, ABS, MBS, SRSS, Suspensions TCAP Not reported	Nil	SRSS & SSBD psychometric properties
Richardson, Caldarella, Young, Young, & Young (2009)	Grades 6 to 9 N = 2,173	Teachers SSBD Top 3 externalising Top 3 internalising N = 226	Teachers, Parents, Students Teachers: CEI, ABS, MBS, TRF, SSRS Parents: CBCL, SSRS Students: ASEBA-YSR ORD, GPA N = 123	Nil	Screening at High School level
Sumi et al. (2013)	Grades 1 to 3 N = 48 schools: N = 24 intervention N = 24 comparison N = 144 teachers	Teachers SSBD Top 5 externalising Top 5 internalising N = 720 intervention N = 720 comparison	Teachers CEI, ABS, MBS N = 432 intervention N = 432 comparison Top 3 externalising Top 3 internalising N = 154 intervention N = 170	Nil	First Steps to Success Programme

			comparison		
Tankersley & Kamps (1996)	Kgtn N= 6 N = 580	Teachers SSBD Top 5 externalising Top 5 internalising N = 97	Teachers CEI, ABS, MBS CBCL, TRF N = 66 N = 26 controls	Nil	Social Skills Intervention
Trout, Epstein, Nelson, Synhorst, & Duppong-Hurley (2006)	Kgtn & Grade 1 N = 9 schools N = 1,999	Teachers ESP kgtn SSBD Grade 1 Not reported Not reported	Teachers ESP-CEI, ABS, MBS SSBD-CEI, ABS, MBS WRMT-R N = 247	Nil	Profiles for behaviour and reading interventions
Tsai & Cheney (2012)	Grades 1 to 3 N = 9 schools	Teachers SSBD Not reported Not reported	Teachers CEI, ABS, MBS N = 103	Nil	Check, Connect & Expect Progamme
Walker, Cheney, Stage, & Blum (2005)	Grades 1 to 6 N = 3 schools N = 1,540	Teachers SSBD Top 3 externalising Top 3 internalising N = 378	Teachers CEI, ABS, MBS ORD + CBM N = 124	Nil	Beacons Project
Walker, Seeley, Severson, Graham, Feil, Serna, Golly, & Forness (2009)	Grades 1 to 3 N = 34 schools N = 243 teachers N = 723	Teachers SSBD Top 5 externalising Top 5 internalising N = 200	Teachers CEI, ABI, MBS Top 3 externalising Top 3 internalising N = 133	Nil	First Steps to Success Programme
Young, Sabbah, Young, Reiser, & Richardson (2010)	Grades 6 to 9 N = 5 high schools N = 15,932	Teachers SSBD Top 10 externalising Top 5 internalising Not reported	Teachers CEI, ABS, MBS Top 3 externalising Top 3 internalising N = 1,065	Nil	Screening study Gender

Note: ABS = Adaptive Behavior Scale, AET = Academic Engaged Time, ASEBA =Achenbach System of Empirically Based Assessment, BASC-2 = Behavior Assessment System for Children (2nd ed.), BERS = Behavior and Emotional Rating Scale, BESS= Behavior & Emotional Systematic Screening, CBCL = Child Behavior Checklist, CBM =Curriculum-based measurement, CEI = Critical Events Index, CTRS = Conner's Teacher Rating Scale, ESP = Early Screening Project, GPA = Grade point average, Kgtn = kindergarten, MBS = Maladaptive Behavior Scale, ORD = Office Referral Discipline, PSB = Peer Social Behavior, SARS = School Archival Record Search, SDQ = Strengths and Difficulties Questionnaire, SSBD= Systematic Screening for Behavior Disorders, SSRS = Social Skills Rating Scale, SRSS-IE (internalising), T-Cap = Achievement test in reading, language, arts, mathematics, science and social studies, TOPA = Test of Phonological Awareness, TRF =Teacher Report Form, WJ-III = Woodcock Johnston III Tests of Achievement, WRMT-R = Woodcock Ready Mastery Test –Revised. *Unpublished final report for the Ministry of Education; published by Tyler-Merrick & Church (2012).

Appendix 2

Examples of Studies Consisting of Multiple Gating Behavioural Screening Procedures Undertaken in Schools, Preschools, and/or Kindergartens which Met Criteria 1, 2, 3 and 4 of the Literature Review.

Author/date	Participants Grade level Total number (or number of sites)	Gate 1 Undertaken by Procedure used Nomination criteria Total Nominations	Gate 2 Undertaken by Rating Scales used Total meeting criteria	Gate 3 Undertaken by Ob. procedure Total identified	Comments
Feil, Severson, & Walker (1998)	Preschool & Kgtn N = 2,797 chn N = 17 teachers	Teachers ESP Top 5 externalising Top 5 internalising N = 947	Teachers CEI, Aggressive BS, ABS, MBS, CBCL, CRS Top 3 externalising Top 3 internalising 1 boy/girl control N = 410	Researchers SBO 10 min X 2 classroom 10 min X 2 playground Top1 externalising Top 1 internalising 1 boy/girl control N = 62	Research project: Gender difference & Gate 2 cut-off scores
Feil, Walker, Severson, & Ball (2000)	Preschool N = 954 chn	Teachers ESP 3 externalising 3 internalising 1 boy/1girl control N = 320 (consent for 126)	Teachers & Parents CEI, ABS, MBS, SIS CBCL, SSRS-T & P Parent rating system N = 44 externalising N = 46 internalising N = 36 controls	Researchers PSB 10 min X 2 classroom 10 min X 2 playground N = 16	Research project: Cross cultural & Gate 2 cut-off scores
Kamps, Wills, Greenwood, Thorne, Lazo, Crockett, McGonigle Akers, & Swaggart (2003)	Kgtn to Grade 2 N = 730 chn (383 consented) N = 5 schools N = 45 teachers	Teachers ESP – kgtn (mod) SSBD-school (mod) N = 237 N = 146 controls	Teachers CEI, ABS, MBS DIBELS N = not reported	Researchers PSB N = 40 beh at-risk N = 137 acad at-risk N = 60 beh/acad at-risk	Screening for literacy programme only

McKinney, Montague, & Hocutt (1997)	Kgtn & Grade 1 N = 628 chn 2 schools 24 classrooms	Teachers SSBD 5 externalising 5 internalising N = 120	Teachers & Parents CEI, ABS, MBS, CBI-T, SSRS (T & P) N = 92 (classified as low-risk)	Researchers AET, PSB N = 91(classified as moderate =63; high-risk = 28)	Research project: Gender difference & Gate 2 cut-off scores
Montague, Enders, Cavendish, & Castro (2011)	Kgtn & Grade 1 N = 628 chn N = 24 schools	Teachers SSBD - not described N = 115	Teachers ABS, MBS - not described N = 63	Researchers Classroom & playground Observations - not described N = 15 externalising N = 13 internalising	Behaviour screening for longitudinal project; beh. & academic trajectory from middle to high school
Walker, Kavanagh, Stiller, Golly, Severson, & Feil (1998)	Cohort 1 Kgtn = 31 classes N = 679 chn N = 25 teachers	Teachers ESP 5 externalising 5 internalising Top 3 externalising Top 3 internalising N = 186 (split into 2 cohorts)	Teachers ABS, MBS, CBCL-TRF N = 55	Researchers AET & PSB Cohort 1 = 24 Cohort 2 = 22	First Step to Success Programme

Note: ABS = Adaptive Behavior Scale, Acad = Academic, Aggressive BS = Aggressive Behavior Scale, Beh = Behaviour, CBCL = Child Behavior Checklist, CBCL-TRF = Child Behavior Checklist–Teacher Report Form, CBI-T = Classroom Behavior Inventory, CEI = Critical Events Index, Chn = children, CTCS = Classroom/Teacher Characteristic Survey, DIBELS = Dynamic Indicators of Basic Literacy Skills, EBD = Emotional and Behavioural Disorders, ESP = Early Screening Project, Kgtn = kindergarten, MBS = Maladaptive Behavior Scale, MOOSES = Multiple Option Observations System for Experimental Studies, PSB = Peer Social Behavior Scale, SBO = Social Behaviour Observation, SES = Student Enrolment Survey, SIS = Social Interaction Scale, SRS = Student Record Survey, SSBD = Systematic Screening for Behavior Disorders, SSRS-T & P = Social Skills Rating System-Teachers & Parent, WJ-III = Woodcock-Johnson III Test of Achievement.

Appendix 3

The Social Development Project
Assessing Social Development

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Teacher Nomination Form
(Kindergarten 3-4 year olds)

Kindergarten: _____ Session:_____

Teacher's initials:_____ **Today's date: __/ __/ __**

Instructions

1. Please read the definition of "children with behaviour difficulties", below, and write down the names of any children in your kindergarten who qualify as "children with behaviour difficulties".
2. When completed, pass this form to the Head Teacher.

Definition – Children with behaviour difficulties

Please list any children in your kindergarten who (a) comply with teacher instructions much less frequently than other children of the same age and any children who (b) engage in antisocial behaviour much more frequently than other children of the same age.

	Nominated Child	***Partner Child***
1		
2		
3		
4		

Frequently Asked Questions

Q What do you mean by antisocial behaviour?

A Antisocial behaviour includes any behaviour which is widely regarded as socially unacceptable.

Q Does a child have to be both non-compliant and antisocial in order to be nominated?

A No. You should list the children who follow your instructions less frequently than other children, you should list the children who engage in unacceptable behaviour more frequently than other children and you should list the children who do both of these things.

Q I have a girl who bosses and bullies other children but she is not disruptive. Should I list her?

A Yes, girls with behaviour difficulties are sometimes overlooked It is particularly important that you do not overlook any girls who meet this definition.

Q One of the children is developmentally delayed and engages in lots of inappropriate behaviour at kindergarten. Do I list her?

A If the child meets the definition, then list her.

Q One of the children has Autism and his interactions with other children are often socially inappropriate. Do I list him?

A If the child meets the definition, then list him.

Q I am not sure whether to list child X or not?

A If you can't decide whether to list a child or not, then list them. It is important that all of the children who may be at risk be identified at this first stage of the screening process.

Appendix 4

The Social Development Project
Assessing Social Development

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Teacher Nomination Form (Years 1-8)

School: _____ **Year Level** _____

Teacher's initials:_____ **Today's date:** __/ __/ __

Instructions

1. Please read the definition of "students with behaviour difficulties", below, and write down the names of any students in your class who qualify as "students with behaviour difficulties".
2. When completed, pass this form to the Principal.

Definition - Students with behaviour difficulties

Please list any students in your class who (a) comply with teacher instructions much less frequently than other students of the same age or who (b) engage in antisocial behaviour much more frequently than other students of the same age.

	Nominated Student	***Partner Student***
1		
2		
3		
4		
5		

Frequently Asked Questions

Q **What do you mean by antisocial behaviour?**

A Antisocial behaviour includes any behaviour which is widely regarded as socially unacceptable.

Q **Does a student have to be both non-compliant and antisocial in order to be nominated?**

A No. You should list the students who follow your instructions less frequently than other students, you should list the students who engage in unacceptable behaviour more frequently than other students and you should list the students who do both of these things.

Q **I have a girl who bosses and bullies other students but she is not disruptive to the class. Should I list her?**

A Yes, antisocial girls are sometimes overlooked because their antisocial behaviour is more secretive and less obvious than that of antisocial boys. It is particularly important that you do not overlook any antisocial girls.

Q **One of my students is developmentally delayed and engages in lots of inappropriate behaviour in the classroom. Do I list her?**

A If the student meets the definition, then list her.

Q **One of my students has Autism and his interactions with other students are often socially inappropriate. Do I list him?**

A If the student meets the definition, then list him.

Q **I am not sure whether to list student X or not?**

A If you can't decide whether to list a student or not, then list them. It is important that all of the students who may be at risk be identified at this first stage of the screening process.

Appendix 5

The Social Development Project
Assessing Social Development

Pilot Study

Self-Recording of Teacher Instruction:

Instruction Manual and Recording Form

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Instructions for Teachers on how to complete the Teacher Self-Recording Form

This self-recording form has been designed for easy use. You are requested to record only two forms of instruction:

1. Instructions to the ***whole class*** where there is an **ACTION** to comply too (of which the two nominated students are expected to comply).
2. Action request/instruction given ***specifically*** to either of the two nominated students.

Use the Codes on page 3 to code your instruction and the two nominated student's response to your instruction. It will help to memorise the Codes if you can. If your instruction or their response is not one of the developed Codes, make up your own code but use it consistently for all your observations. Ensure you record your 'own' code on the recording form in the appropriate section.

Use a new recording form each day and please follow these instructions:

1. Fill in all the details in the top box – ensure the date is correct.
2. Complete the student ID section. Select one child who regularly engages in antisocial behaviour and if you do not have one then select a child who is 'slow' when complying with your instructions. Select a second child who regularly complies with your instruction.
3. Note in your classroom where the two identified students are placed.
4. Start your observation/self-recording as soon as you start your class in the morning (i.e. 9.00 a.m).
5. For each student record in the following in the correct column:
    - **Column 1**: At your first instruction, record the number of the instruction (e.g. 1 = first instruction)
    - **Column 2**: Write the type of instruction given in coded format (e.g. C= everyday classroom instruction).
    - **Column 3:** If you have time – write or code your instruction (e.g. LU = line up). If not, then fill this column in as soon as you can after the observation.
    - **Columns 4/5 for Student 1 – Columns 5/6 for Student 2**: Observe the two identified students and record the time it takes them to respond to your instruction and if they responded with Defiance, code their response.
5. At your second instruction – repeat step 5.
6. Continue as above until 10 instructions have been given (approx 30 minutes).
7. If necessary, complete the Specify Instruction section if time did not allow when teaching.
8. Repeat the above instructions on Day 2.
9. Store completed forms in a safe place and give to the Principal researcher.

Codes to use

Column 2 Instruction Type	Column 3 Specify Instruction - Examples
C = Everyday classroom instructions	Line up; hats/jacket away; come sit on the mat; wiggle and get comfortable; sit at your desk; notices from home; answering roll call; put activity out/away; hand up; stand up; sit down; come to my desk; homework out; take books out; pens ready; eyes this way; look this way; put away …..; listening please; walking quietly.
D = Disciplinary instruction	If you don't do this now…….Childs name repeated more than once
A = Assertive instruction	Quiet please (with tone); I am waiting; Do it now please; 'look', look at me; listening now.
Q = Question given	Will you please …..; Would you like to……..
S = Signal instruction	Clapping; hands on head; bell sound; arms folded; hand up in air.

Columns 4 and 6 Time Definitions
√ = **Complies** within 5 seconds **SC** = Complies **between 5 and 20 seconds** after initial instruction **NC= Non-compliance –** After 20 seconds**,** does not comply with teacher instruction **X = Defiance** – Does not comply with instructions and engages in antisocial behaviour - write code

Column 5 and 7 Defiance - Examples
sw=swearing **sp**=spitting **hit=**hitting **pu**=pushing **kk**=kicking **to**= throwing objects **sit**=sitting at desk/mat not following what you have asked, **tub**=talking under breath (may include swearing and derogatory comments)

Feedback section	Your comments are very valuable as I am attempting to see what teachers can reasonably do in the 'everyday classroom' to record children's' compliance/behaviour. ***Your comments will be very helpful when refining this self-recording form***.
1.	**How many practice turns did you have before you started your observation?** **How many 'practice turns' would you recommend other teachers have before they self-record? Please explain why you recommend this number?**
2.	**Were the instructions easy to follow? YES/NO** **If not, please give suggestions for change.**
3.	**Comment on the *ease or difficulty* of recording. What worked and what didn't work** **Worked:** **Didn't work:**
4.	**What suggestions do you have to make this form easier to use?**
5.	**Any other comments**

Many thanks for your valuable time and comments – they are most appreciated.

Gaye and John

Self-Recording Form for Teacher Instruction

School: **Teacher:** **Year: 1 4 7** **Date:** **Time:** **Observer:**						
			Student 1 ID:		**Student 2 ID:**	
Inst No	**Inst Type**	**Specify Instruction**	**Time**	**Defiance Code**	**Time**	**Defiance Code**
1						

Appendix 6

The Social Development Project
Assessing Social Development

Instruction Manual for Teachers (Kindergarten)

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Thank you for your interest in this UC research project. Without your assistance *The Social Development Project: Assessing Social Development* could not be undertaken. We hope that the final outcome of this project will help all teachers assess children's social development accurately and quickly. This part of the project is in three steps.

Step 1: Selection of Children

At a previous staff meeting, you already selected a child (or children) who met the definition of non-compliance/antisocial as described on the Teacher Nomination Form and wrote their name on the Teacher Nomination Form. **This child will now be referred to as Child 1.**

Now, please select Child 2

Child 2 will be a child from the same class, of the same gender and age as Child 1 but who ***does not*** meet the definition of non-compliant/antisocial.

To select this child, go down your Roll and find Child 1's name and then go down to the next child (who is not one of the nominated children) on the roll; this will be Child 2. Repeat this process for each of the children you nominated. You will then have an equal number of nominated children and compliant children (e.g. 2 non-compliant/antisocial children and 2 compliant "partner" children).

Now, place the name of Child 2 name next to Child 1 on your Teacher Nomination Form.

Step 2: Social Development Scale

Please complete one Social Development Scale for each of the ***selected*** pairs of children (one Scale for Child 1 and one Scale for Child 2).

To do this:

1. Copy the initials of each of the selected children onto the front page of the supplied Social Development Scales.

2. Complete all the kindergarten/child details on page 1.

4. Read and follow the instructions carefully on page 2 before completing the Scale questions.

5. Complete the scale questions.

6. Please check that ***every question*** on page 1 has been answered and that ***all the 30 questions/behaviours have been responded to.***

7. Return the Scales to your Head Teacher.

SPECIAL NOTE

One extra task is requested of your kindergarten. Please ask a ***second teacher*** to complete a Social Development Scale for ***every child*** who has been included in this study.

Instructions

(a) Find a second teacher for each of the children in the study and ask this teacher to complete a second Social Development Scale **independently and without consulting the other teachers.** This second teacher should be one of the teaching team who did not complete the first scale for any of the selected children.

(b) Follow the instructions on the Social Development Scale.

(c) When completed, ***staple*** the second teacher scale to the back of the first scale.

These second Scales are very important because they will enable us to tell whether the Social Development Scale is reliable at this level.

Step 3: The Teacher Recording Form

You are now requested to record a sample of one teacher's everyday instructions (and the two children's responses to those instructions). Select a time during the day when a teacher (any one of the team) is likely to give at least 10 action instructions to the children. For example, this may be the teacher leading mat time or organising kai time or at tidy up time. The aim is to complete 10 consecutive instructions each day for 3 days – that is, to record a set of 30 instructions. Teachers can rotate the 'lead teacher' and 'recording teacher' tasks as it fits with their normal daily routine/programme.

To do this the recording teacher will:

3. Record each **action instruction** that the 'lead' teacher gives to the group containing the two children being observed. An action instruction is a teacher direction or request for children to engage in or complete some action.

and

4. Self-record each ***action*** instruction that the 'lead' teacher gives ***specifically*** to either of the two children being observed.

This task requires practice. Please take time to memorise the different codes before you begin your practice recordings. During the initial trials of the recording form, teachers found they needed about 3-5 practice runs before they gained the confidence and skill to accurately take the recordings. Be prepared to take a longer or a shorter time depending on your own level of recording skill.

The observation - Recording teacher

Use a new recording form each day and follow these instructions:

6. Fill in all the details in the top box – ensure the information is correct.
7. Complete the Child ID section.
    - Child 1 is the nominated child, the one who meets the definition on the Teacher Nomination Form. Write this child's initials in the Child 1 box.
    - Child 2 is the compliant "partner" child – as identified from the group roll. Write this child's initials in the Child 2 box.
8. Before you start, write down the task/activity the children will engage in.
9. Note in your kindergarten where the two identified children are placed.
10. Start your recording at soon as the 'lead' teacher starts the predetermined task/activity.
11. For each *action instruction* the 'lead' teacher gives, record the following in the correct column:

    - **Column 1**: Each time the task/activity changes write in the new task/activity.
    - **Column 2**: The instruction numbers are provided.
    - **Column 3:** For each *action instruction* given - ***circle*** the type of instruction the teacher gives (codes are on the recording form).
    - **Column 4:** Write in words for the instruction (or indicate type of signal). If necessary, write complete instruction at the recorders next break time.
    - **Column 5 for Child 1 – Column 7 for Child 2**: After the teacher gives the instruction - observe the two identified children and ***circle*** the time it takes them to respond to the instruction (codes are on the recording form).
    - **Column 6 for Child 1 – Column 8 for Child 2**: If the child(ren) respond with defiant behaviour, ***circle*** the code provided (codes are on the recording form).
    - **NOTE: if an instruction is to just one of the observed children then CROSS OUT (X) the other child's response column. This will then indicate that the teacher has given an instruction to just one of the observed children.**

7. At the second instruction – repeat all of Step 6.
8. Continue as above until 10 instructions have been given.
9. Repeat the above recording on Days 2 and 3.
10. Store completed recordings forms in a safe place and give to the Head Teacher.

Teacher Recording Form for Teacher Instruction

Kindergarten: **Lead Teacher taking the group:** **Teacher Recorder:**

Date: **Time:** **Observer:**

				Child 1: Nominated child initials:		**Child 2: Partner child initials:**	
Task/ activity	**Inst No**	**Instruction Type (circle)**	**Teacher Instruction –write instruction**	**Comply (circle)**	**Defiance (circle)**	**Comply (circle)**	**Defiance (circle)**
	1	C D Q S O		√ X	S M H T A	√ X	S M H T A
	2	C D Q S O		√ X	S M H T A	√ X	S M H T A
	3	C D Q S O		√ X	S M H T A	√ X	S M H T A
	4	C D Q S O		√ X	S M H T A	√ X	S M H T A
	5	C D Q S O		√ X	S M H T A	√ X	S M H T A
	6	C D Q S O		√ X	S M H T A	√ X	S M H T A
	7	C D Q S O		√ X	S M H T A	√ X	S M H T A
	8	C D Q S O		√ X	S M H T A	√ X	S M H T A
	9	C D Q S O		√ X	S M H T A	√ X	S M H T A
	10	C D Q S O		√ X	S M H T A	√ X	S M H T A
Total							

Instruction Type	**Column 3 - examples**
C = Everyday centre instructions	hats/jacket away; sit on the mat; get comfortable; sit at the table; put activity out/away; stand up; sit down; come here please; eyes this way; listening please; walking quietly, tidy-up time, mat-time etc.
D = Disciplinary instruction	If you don't do this now…….Childs name repeated more than once, Quiet please (with tone); I am waiting; Do it now please; 'look', look at me; listening now.
Q = Question given	Will you please …..; Would you like to……..
S = Signal	Clapping; hands on head; using a bell; arms folded; hand up in air.
O = Other	Type of instruction not listed above

Compliance Codes **Columns 5 and 7**

√ = **Complies** within 10 seconds (count to 10)

X = **Non-compliance –**does not comply with teacher instruction within 10 seconds

Defiance Codes **Columns 6 and 8**

Defiance = Does not comply with instruction within 10 seconds and engages in antisocial behaviour

Code

S = swearing
M = muttering
H = hitting and kicking
T = throwing or damaging
A = avoidance behaviour, non-disruptive, intentional ignoring, walking away, not answering

Appendix 7

The Social Development Project
Assessing Social Development

Instruction Manual for Teachers (Year 1-8)

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Thank you for your interest in this UC research project. Without your assistance *The Social Development Project: Assessing Social Development* could not be undertaken. We hope that the outcome of this project will help all teachers assess students' social development accurately and quickly. This part of the project is in three steps.

Step 1: Selection of Students

At a previous staff meeting, you already selected a student (or students) who met the definition of non-compliance/antisocial as described on the Teacher Nomination Form and wrote their name on the Teacher Nomination Form. **This student will now be referred to as Student 1.**

Now please select Student 2

Student 2 will be a student from the *same* class, Year level and gender as Student 1 but who ***does not*** meet the definition of non-compliant/antisocial.

To select this student, go down your classroom Roll and find Student 1's name and then go down to the next student (who is not one of the nominated students) on the roll; this will be Student 2. Repeat this process for each of the students you nominated. You will then have an equal number of nominated students and compliant students (e.g. 2 non-compliant/antisocial students and 2 compliant "partner" students).

Now, place the name of Student 2 next to Student 1 on your Teacher Nomination Form.

Step 2: Social Development Scale

Please complete one Social Development Scale for each of the ***selected*** pairs of students in your class (one Scale for Student 1 and one Scale for Student 2).

To do this:

3. Copy the initials of each of the selected students onto the front page of the supplied Social Development Scales.

4. Complete all the school/student details on page 1 of the Social Development Scale.

4. Read and follow the instructions carefully on page 2 before completing the Scale questions.

8. Complete the scale questions.

9. Please check that ***every question on page 1*** has been answered and that ***all the 30 questions/behaviour have been responded too.***

10. Return the Scales to your Principal or selected staff member.

SPECIAL NOTE: Year 7 and 8 classes only

One extra task is requested of your school. In Year 7 and 8 classes, please ask a second ***teacher*** to complete a Social Development Scale for every student who has been included in this study.

Instructions

(d) Find a second teacher for each of the students in the study and ask this teacher to complete a second Social Development Scale **independently and without consulting the other teachers.** This second teacher may be the interchange teacher or the DP.

(e) Follow the instructions on the Social Development Scale.

(f) When completed, ***staple*** the second teacher scale to the back of the first scale.

These second Scales are very important because they will enable us to tell whether the Social Development Scale is reliable at this level.

Step 3: The Teacher Self-Recording Form

You are now requested to self-record a sample of your everyday instructions (and the two student's responses to your instructions). Select a time during the day when you are likely to give at least 10 action instructions to the selected students. For example, the first 30 minutes of the day or at the beginning of math or immediately after the lunch break. The aim is to complete 10 consecutive instructions each day for 3 days – that is, to record a set of 30 instructions.

To do this you will:

5. Self-record each **action instruction** which you give to the group containing the two students being observed. An action instruction is a teacher direction or request for students to engage in or complete some action.

and

6. Self-record each ***action*** instruction which you give ***specifically*** to either of the two students being observed.

This task requires practice. Please take time to memorise the different codes before you begin your practice recordings. During the initial trials of the self-recording form, teachers found they needed about 6-8 practice runs before they gained the confidence and skill to accurately take their own self-recordings. Be prepared to take a longer or a shorter time depending on your own level of recording skill.

Teachers - Ready to self-record

Use a new recording form each day and follow these instructions:

12. Fill in all the details in the top box – ensure the information is correct.
13. Complete the student ID section.
    - Student 1 is your nominated student, the one who meets the definition on the Teacher Nomination Form. Write this student's initials in the Student 1 box.
    - Student 2 is the compliant "partner" student – as identified from your class roll. Write this student's initials in the Student 2 box.
14. Before you start, write down the task/activity the students will engage in.
15. Note in your classroom where the two identified students are placed.
16. Start your self-recording at soon as you start your predetermined task/activity.
17. For each *action instruction* you give, record the following in the correct column:

    - **Column 1**: Each time the task/activity changes write in the new task/activity.
    - **Column 2**: The instruction numbers are provided.
    - **Column 3:** For each *action instruction* you give - ***circle*** the type of instruction you gave (codes are on the recording form).
    - **Column 4:** Write in cue words for your instruction. Finish writing in the whole instruction at your next break time.
    - **Column 5 for Student 1 – Column 7 for Student 2**: After giving your instruction - observe the two identified students and ***circle*** the time it takes them to respond to your instruction (codes are on the recording form).
    - **Column 6 for Student 1 – Column 8 for Student 2**: If the student(s) respond with defiant behaviour, ***circle*** the code provided (codes are on the recording form).
    - **NOTE: if you give an instruction to just one of the observed students then CROSS OUT (X) the other student's response column. This will then indicate that you have given an instruction to just one of the observed students.**

7. At your second instruction – repeat all of Step 6.
8. Continue as above until 10 instructions have been given.
11. Repeat the above instructions on Days 2 and 3.
12. Store completed recordings forms in a safe place and give to the Principal or nominated staff member.

Teacher Self-Recording Form for Teacher Instruction

School: **Teacher:** **Year:**

Date: **Time:** **Observer:**

				Student 1 – Nominated student initials:		**Student 2 – Compliant student initials:**	
Task/ activity	**Inst No**	**Instruction Type (circle)**	**Teacher Instruction –write in cue words. Fill in later.**	**Comply (circle)**	**Defiance (circle)**	**Comply (circle)**	**Defiance (circle)**
	1	C D Q S O		√ X	S M H T A	√ X	S M H T A
	2	C D Q S O		√ X	S M H T A	√ X	S M H T A
	3	C D Q S O		√ X	S M H T A	√ X	S M H T A
	4	C D Q S O		√ X	S M H T A	√ X	S M H T A
	5	C D Q S O		√ X	S M H T A	√ X	S M H T A
	6	C D Q S O		√ X	S M H T A	√ X	S M H T A
	7	C D Q S O		√ X	S M H T A	√ X	S M H T A
	8	C D Q S O		√ X	S M H T A	√ X	S M H T A
	9	C D Q S O		√ X	S M H T A	√ X	S M H T A
	10	C D Q S O		√ X	S M H T A	√ X	S M H T A
Total							

Instruction Type	**Column 3 – examples**
C = Everyday classroom instructions	Line up; hats/jacket away; sit on the mat; get comfortable; sit at your desk; notices from home; answering roll call; put activity out/away; hand up; stand up; sit down; come to my desk; homework out; take books out; pens ready; eyes this way; look this way; listening please; walking quietly.
D = Disciplinary instruction	If you don't do this now…….Childs name repeated more than once, Quiet please (with tone); I am waiting; Do it now please; 'look', look at me; listening now.
Q = Question given	Will you please …..; Would you like to……..
S = Signal	Clapping; hands on head; using a bell; arms folded; hand up in air.
O = Other	Type of instruction not listed above

Compliance Codes Columns 5 and 7

√ = **Complies** within 10 seconds (count to 10)

X = Non-compliance –does not comply with teacher instruction within 10 seconds

Defiance Codes Columns 6 and 8

Defiance = Does not comply with instruction within 10 seconds and engages in antisocial behaviour

Code

S = swearing
M = muttering
H = hitting and kicking
T = throwing or damaging
A = avoidance behaviour, non-disruptive, intentional ignoring, intentional off task

Appendix 8

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UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

APPENDIX 8

Ref: HEC 2008/78/CoEdn

1 July 2009

Gaye Tyler-Merrick
School of Educational Studies & Human Development
College of Education
UNIVERSITY OF CANTERBURY

Dear Gaye

I am very pleased to inform you that your application for an amendment to the research proposal "The social development: Project. Phase 1: Assessing social development." has been granted ethical approval from the College of Education Ethical Clearance Committee.

Please note that should circumstances relevant to this current application change you are required to reapply for ethical approval.

If you have any questions regarding this approval please let me know.

We wish you well for your continuing research.

Yours sincerely

Dr Missy Morton
Chair
Ethical Clearance Committee

Appendix 9

The Social Development Project

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Assessing Social Development

Information Brochure for Regional Kindergarten Association and Kindergarten Head Teachers

Principal Researcher
Gaye Tyler-Merrick, Dip. Tchg., M.Ed.
School of Education Studies and Human Development
College of Education
University of Canterbury

Project Supervisor
John Church, PhD.
School of Education Studies and Human Development
College of Education
University of Canterbury

Background

The provision of appropriate teaching and behaviour management programmes for children who engage in antisocial behaviour requires careful observation of the children's behaviour in order to identify the probable causes of the antisocial behaviour. The only accurate way of distinguishing between children whose antisocial behaviour is a reaction to circumstances and children whose antisocial behaviour is a result of more deep-seated problems is by observing the children's behaviour in the kindergarten. Attempts to devise an observation procedure which can be used in the kindergarten have met with little success to date. If an external observer is introduced into the kindergarten, the children with behaviour problems often notice that it is they who are being observed with the result that their behaviour changes. In addition, many hours of observations have to be undertaken in order to obtain a reliable estimate of the frequency of occurrence of antisocial behaviour. If teachers are asked to record children's behaviour they find it difficult to do this with any accuracy because they have so many other things to focus on during their moment-to-moment interactions with the children.

The aim of this project

The overall aim of this project is to investigate the possibility of developing a standardised procedure for identifying antisocial development in children. We want to see if it is possible to develop a three step diagnostic procedure which can be used by kindergartens to identify antisocial development.

Benefits of participation

If we can work out a reliable way of distinguishing between children with temporary behaviour difficulties and children with persistent behaviour difficulties this will be really helpful to you because it will enable you to respond more effectively and more quickly to children with the two different kinds of difficulties.

Information for Head teachers and teachers

A sample of kindergartens will be invited to participate in this project. The project involves three steps. During Step 1, Head Teachers will be asked to nominate any child at their kindergarten who regularly fails to comply with teacher instructions or who frequently engages in antisocial behaviour. From this information, the principal researcher will select children for Step 2. Also during Step 1, the Head teacher will be asked to identify a second child in the kindergarten who regularly complies with teacher instruction and does not engage in antisocial behaviour. During Step 2, pairs of teachers in the kindergarten will be asked to each complete a Social Development Scale for each of the selected children with behaviour difficulties and each of the matched "partner" children who are not experiencing behaviour difficulties. During Step 3 the Head Teacher (or a teacher) will be asked to record, on a prepared recording form, the selected children's responses to 10 consecutive teacher instructions given each day for 3 days. The total teacher time required to record 10 instructions is 3 to 4 minutes (spread out over 30 minutes or so). On some occasions, the principal researcher (or a research assistant) will observe the teacher giving instructions to the children and the responses of the two children selected for observation.

If the Head teacher, teachers and parents agree, up to one quarter of the teachers (and their "partner" children) will be video recorded.

In return, the researchers will provide each participating kindergarten with a report describing the results of the study. If we can design a reliable diagnostic procedure, we will give a copy of this procedure to each participating kindergarten.

There are no foreseeable risks. As is customary with such projects, the research participants will be completely anonymous. No kindergarten, head teacher, teacher or child's name will appear in any report. All names will be removed from the Teacher Nomination Form and the Social Development Scales immediately following processing. All information will be stored in locked filing cabinets in a room allocated to the project. Participation is voluntary. Participants have the right to withdraw from the project at any time by emailing or telephoning the principal researcher or informing their Head Teacher who, in turn, will inform the principal researcher. The University of Canterbury Human Ethics Committee has reviewed and approved this project.

What participation in this project will involve

Step 1: First, you will receive an invitation to participate. If the Regional Kindergarten Association and the individual kindergarten teacher teams agree to participate, the Head Teacher will be asked to complete the following tasks:

1. Sign an Agreement to Participate Form.
2. At a staff meeting time, explain the project to the other members of the teaching team
3. Complete the Teacher Nomination Form
4. Inform the principal researcher that this task is completed.

Step 2: The principal researcher will then select certain nominated children and discuss with the participating Head Teacher a suitable time for a staff meeting where the project can be fully described and questions asked and answered.

Head teachers and teachers who agree to assist with this research project will be asked to:

1. Attend a short 20-minute briefing session at a convenient time.
2. Read the teacher information sheet and sign a consent form.
3. Identify one child who regularly complies with teacher instructions by going to the class roll and finding the next child on the roll, following the nominated child, who regularly complies with teacher instructions.
4. Assist the researcher to provide all parents/whanau of the children with an Information Sheet and Consent Form and collect the consent forms as they are returned.
5. Complete a short Social Development Scale for each of the two pairs of children. Each scale takes about 8-10 minutes to complete. Wherever possible we would like two completed scales for each child, completed independently by two separate teachers.

Step 3: Head teachers and teachers will be asked to:

1. Practice a simple self-recording procedure for 6 to 8 of their instructions until they are familiar with the procedure.
2. Complete a recording of the two children's responses to 10 consecutive teacher requests given each day for 3 days (times to be decided).
3. Allow the principal researcher (or their research assistant) to make a parallel observation of the responses of these two children or, in certain cases, a video recording.

How to Contact Project Personnel

The research team welcomes inquiries about the project. If you wish to discuss the project or if you have any concerns about the project please contact the principal researcher or the project supervisor. Ms Tyler-Merrick has overall responsibility for the project and Dr Church is the project supervisor.

Thank you for taking the time to consider this proposal. If you want to know more about this study, please feel free to contact Gaye Tyler-Merrick at any time.

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Appendix 10

The Social Development Project

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Assessing Social Development

Information Brochure
for
Boards of Trustees and Principals

Principal Researcher
Gaye Tyler-Merrick, Dip. Tchg., M.Ed.
School of Education Studies and Human Development
College of Education
University of Canterbury

Project Supervisor
John Church, PhD.
School of Education Studies and Human Development
College of Education
University of Canterbury

Background

The provision of appropriate teaching and behaviour programmes for students who engage in antisocial behaviour requires careful observation and study of the student's behaviour in the classroom in order to identify the probable causes of the antisocial behaviour. The only accurate way of distinguishing between students whose antisocial behaviour is a reaction to circumstances and students whose antisocial behaviour is a result of more deep-seated problems is by observing the student's behaviour in the classroom. Attempts to devise an observation procedure which can be used in the classroom have met with little success to date. If an external observer is introduced into the classroom, the students with behaviour problems often notice that it is they who are being observed and their behaviour in the classroom changes. In addition, many hours of observations have to be taken in order to obtain a reliable measure of behaviour in the classroom. If teachers are asked to record student's behaviour they find it difficult to do this with any accuracy because they have so many other things to focus on during their moment-to-moment interactions in the classroom.

The aim of this project

The overall aim of this project is to investigate the possibility of developing a standardised procedure for identifying antisocial development in children. We want to see if it is possible to develop a three step diagnostic procedure which can be used by schools to identify antisocial development.

Information for Principals and Teachers

A sample of primary and intermediate schools in the greater Christchurch area will be invited to participate in this project. Because of the number of students in the region, information on students from Years 1, 4 and 7 only will be collected. The project involves two steps. During Step 1, principals will be asked to provide information regarding the demographic make-up of their school and teachers at Years 1, 4, and 7 will be asked to nominate any students in their class who regularly fail to comply with teacher instructions. From this information, a random selection of 100 students over the Christchurch greater area will be selected for Step 2.

During Step 2, the classroom teacher of each of the selected non-compliant students will be asked also to identify a student in their class who regularly complies with teacher instructions and to complete a Social Development Rating Scale for both these students. The main task asked of the teachers of each pair of students will be to record on a prepared recording form their student's responses to the first 8-10 teacher instructions given each morning for 3-5 mornings. The total

teacher time required for this will be 2-3 minutes in a morning. On some occasions, a video or the principal researcher (or research assistant) will observe the teacher giving instructions to the class and the responses of the two students selected for observation.

One extra task will be requested of some teachers. To check the reliability of the Social Development Rating Scale a second teacher at Year 7 will be asked to complete a second rating scale for each student nominated at Year 7.

In return, the researchers will provide each participating school with a report describing the results of the study. The results may also be presented at the annual conference of the NZ Association for Research in Education.

There are no foreseeable risks. As is customary with such projects, the research participants will be completely anonymous. No school, principal, teacher or student's name will appear in any report. All names will be removed from the demographic details form, nomination form and rating scales immediately following processing. All information will be stored in locked filing cabinets in a room allocated to the project. Participation is voluntary. Participants have the right to withdraw from the project at any time by emailing or telephoning the principal researcher or informing their school principal who will, in turn, will inform the principal researcher. The University of Canterbury Human Ethics Committee has reviewed and approved this project.

What participation in the project will involve

Selected schools in the greater Christchurch area will receive an information brochure and a request to participate in the project. The project consists of two steps:

Step 1: The school Principal will be asked to complete the following tasks:

5. Sign an Agreement to participate form.
6. Complete a one-page school details questionnaire. Question 6 on the questionnaire asks for the number of students at Years 1, 4 and 7 who have been identified as students who do not regularly comply with teacher instructions. Post these forms to the principal researcher.

Step 2: Once every school has responded, the principal researcher will, through a selection process, select 100 students from Years 1, 4 and 7 and discuss with the

participating Principal a suitable time for a staff meeting where the project can be described in full and questions asked and answered.

Teachers who agree to assist with this research project will be asked to:

6. attend a short 20-minute briefing session at a convenient time;
7. read the teacher information sheet and sign a consent form;
8. assist the researcher to provide all parents/caregivers and students in their class with an information sheet and consent form and collect the consent forms;
9. identify one student who regularly complies with teacher instructions by going to the class roll and finding the next student on the roll, following the non-compliant student, who regularly complies with teacher instruction;
10. practice the simple recording procedure for 6 to 8 teacher requests for two or three mornings;
7. complete a recording of the selected students responses to the first 8 to 10 teacher requests for 3 to 5 mornings;
8. allow the principal researcher (or their research assistant) to make a parallel recording of the responses of these two students either via video or through direct observation;
9. complete a short social development scale for each of the two students. Each scale takes about 8-10 minutes to complete.

One extra task is requested of schools with Year 7 students.

Schools which include observed students at Year 7 will also be asked to complete a second scale for each observed student. The second scale is to be completed by a second teacher such as an interchange teacher in a larger school or the deputy principal in a small school.

How to Contact Project Personnel

The research team welcomes inquiries about the project. If you wish to discuss the project or if you have any concerns about the project please contact the principal researcher or the project supervisor. Ms Tyler-Merrick has overall responsibility for the project and Dr Church is the project supervisor.

Thank you for taking the time to consider this proposal. If you want to know more about this study, please feel free to contact Gaye Tyler-Merrick at any time.

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Formal complaints regarding the conduct of the project should be sent to:
Dr Missy Morton
Ethical Clearance Committee
College of Education
University of Canterbury
Private Bag
Christchurch
(03) 345-8312

Appendix 11

The Social Development Project

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Assessing Social Development

Kindergarten Head Teacher

Agreement to Participate and Instructions

Principal Researcher
Gaye Tyler-Merrick, Dip. Tchg., M.Ed.
School of Education Studies and Human Development
College of Education
University of Canterbury

Project Supervisor
John Church, PhD.
School of Education Studies and Human Development
College of Education
University of Canterbury

Instructions to Head Teachers

Thank you for your interest in this research project. This package contains an Information Brochure, the Instructions for completing Step 1, Agreement to Participate Form and a set of Teacher Nomination Forms.

If, in your kindergarten you have at least one child who meets the definition as written on the Teacher Nomination Form, please consider the following requests:

1. At a staff meeting, please take time to describe the research project to your teaching team (please refer to Information Brochure). Describe the benefits of the project as you see them.

If you and your team agree to participate then please undertake the following tasks:

2. Please complete the Agreement to Participate section on the next page.

3. Please show the teachers the Teacher Nomination Form and discuss the children who may meet the definition of non-compliant (un-cooperative) as defined on the Teacher Nomination Form.

4. When completing the Teacher Nomination Form, you should enter the name of each child who meets the definition on the Teacher Nomination Form. If in doubt, **include** that child in the count. It is important that all children with compliance problems are included at this point.

5. Please give your *Agreement to Participate* form and your *Teacher Nomination Forms* to the principal researcher when she next visits.

Agreement to Participate

The Social Development Project
Assessing Social Development

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

I have read and understood the information brochure given to me about this research project and what will be required of the kindergarten.

I have discussed the project with the teaching team and they understand what is required of the kindergarten. I understand that the information the kindergarten provides will be treated as confidential and all information collected will be stored in locked filing cabinets in a room allocated to the project. The data collected will be kept for a maximum period of five years and then destroyed. No findings that could identify this kindergarten, the teachers or the children will be published.

I understand that participation in this project is voluntary and that I can withdraw our kindergarten from the project at any time without repercussions.

I consent to our kindergarten participating in The Social Development Project: Assessing Social Development.

Name of Kindergarten: _____

Name: _____

Signature: _____

Date: _____

1. This project has received ethical approval from the University of Canterbury, College of Education Ethical Clearance Committee.
2. Complaints may be addressed to: Dr Missy Morton, Chair, Ethical Clearance Committee, College of Education, University of Canterbury, Private Bag, 4800, CHRISTCHURCH. Telephone: 345-8312.

Appendix 12

The Social Development Project

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Assessing Social Development

School Principal

Agreement to Participate and Instructions

Principal Researcher
Gaye Tyler-Merrick, Dip. Tchg., M.Ed.
School of Education Studies and Human Development
College of Education
University of Canterbury

Project Supervisor
John Church, PhD.
School of Education Studies and Human Development
College of Education
University of Canterbury

Instructions to Principals

Thank you for your interest in this research project. This package contains an Information Brochure, the Instructions for completing Step 1, an Agreement to Participate Form and a set of Teacher Nomination Forms.

Step 1

If, in your school you have at least one child who meets the definition of non-compliant/antisocial behaviour as written on the Teacher Nomination Form, please consider the following requests:

6. At your next staff meeting, please take time to describe the research project to your teachers (please refer to Information Brochure). Describe the benefits of the project as you see them.

   If you and your teachers agree to participate in this research project then:

7. Please complete the Agreement to Participate form on the following page.

8. Please distribute one Teacher Nomination Form to each of your classroom teachers and request them to complete their form at that moment. Please take a few minutes to discuss the definition on the Teacher Nomination Form and draw their attention to the frequently asked questions on the back of the form.

9. When completing the Teacher Nomination Form, the teacher should enter the name of each child who meets the definition on the Teacher Nomination Form. If in doubt, **include** that child in the count. It is important that all children with compliance problems are included at this point.

10. Please collect all the Teacher Nomination Forms.

11. Please give your *Agreement to Participate* form and your *Teacher Nomination Forms* to the principal researcher when she next visits.

Agreement to Participate

The Social Development Project
Assessing Social Development

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

I have read and understood the information brochure given to me about this research project and what will be required of the school.

I have discussed the project with my teachers and they understand what is required of them. I understand that the information the school provides will be treated as confidential and all information collected will be stored in locked filing cabinets in a room allocated to the project. The data collected will be kept for a maximum period of five years and then destroyed. No findings that could identify this school, the teachers or the students will be published.

I understand that participation in this project is voluntary and that I can withdraw our school from the project at any time without repercussions.

I consent to our school participating in The Social Development Project: Assessing Social Development.

Name of School: _____

Name: _____

Signature: _____

Date: _____

3. This project has received ethical approval from the University of Canterbury, College of Education Ethical Clearance Committee.
4. Complaints may be addressed to: Dr Missy Morton, Chair, Ethical Clearance Committee, College of Education, University of Canterbury, Private Bag, 4800, CHRISTCHURCH. Telephone: 345-8312.

Appendix 13

The Social Development Project
Assessing social development

School of Educational Studies and Human Development

Teacher Information Sheet

My name is Gaye Tyler-Merrick and I am currently undertaking research at the College of Education, University of Canterbury. As part of my research I am attempting to develop a simple and manageable procedure which teachers can used to reliably identify students with on-going behaviour difficulties (that is, students at risk of antisocial development).

Teachers who agree to assist with this small research project will be asked to

- attend a short 20-minute briefing session at a convenient time,
- assist with distribution of information sheets and collection of consent forms to students and parents,
- practice the simple recording procedure for the first 30 minutes on 3 to 5 mornings,
- self-record a non-compliant student's response to the first 8 to 10 teacher requests for 3 to 5 mornings,
- self-record a compliant student's response to the first 8 to 10 teacher requests for 3 to 5 mornings,
- allow the investigator to make a parallel direct observation of the student compliance (or video this).
- complete a short rating scale for both students. This scale takes about 8-10 minutes to complete.

It is envisaged that the time taken to complete this work would be approximately 1 hour in total. All information collected will be kept in the strictest confidence and the resulting report will not contain any identifying details about you, the students or the school.

Participation is voluntary. Should you decide to participate in this study, you have the right to withdraw at any time without having to give a reason.

Thank you for taking the time to consider my request. If you want to know more about this project, please feel free to contact either myself or my supervisor at any time.

Yours sincerely,

Gaye Tyler-Merrick
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Dr John Church
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The Social Development Project
Assessing social development

School of Educational Studies and Human Development

Teacher Consent Form

I have read and understood the attached information sheet and I have been given an opportunity to ask the researcher questions about what is involved in my participation. Participation is voluntary and I understand that I have the right to withdraw from the project.

I understand that the information collected will be confidential and that anonymity is assured. The information collected will only be available to the participant, the supervisor and the researcher.

I agree to participate in the Social Development Project: Assessing Social Development as described in the attached information sheet.

Name: _____

Signature: _____

Date: _____

Appendix 14
The Social Development Project
Assessing Social Development

School of Educational Studies and Human Development

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Parent Information Sheet

My name is Gaye Tyler-Merrick and I am doing a study at the University. During (to be decided) I will be visiting your child's classroom to observe your child's teacher. Teachers give many instructions to children during the day and I want to see if your child's teacher can record the type of instructions that he/she gives to two of the children in the class. The teacher will select the two children and I will not know their names or the names of any of the other children in the class.

To help with my study, a research assistant or myself may come into your child's class and take some observations of the teacher or I may video some lessons. I will do this so I can see if the teacher is doing her/his self-recording correctly. While at the school, I will also ask your child's teacher to complete a questionnaire about the social development of the two children that she/he observed.

Participation is voluntary. Because I do not know who the teacher will select for my study, I need to seek permission from all the parents in the class for their child to be considered for this project. If your child is selected, you may withdraw the results of his/her teacher's observations at any time up until the end of the (to be decided) of the 2010 school year.

Please note, the teacher will be asked to 'carry on doing what s/he normally does every day'. No child will be asked to do any special task and no child will be named or identified in any report that I may write.

My project is supervised by Dr John Church. If you have any questions about the study please do not hesitate to contact me (or Dr Church). All procedures used in this project have been approved by the University of Canterbury Human Ethics Committee.

Yours sincerely,

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The Social Development Project
Assessing Social Development

School of Educational Studies and Human Development

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Parent/Caregiver Consent Form

I give permission for _____ to participate in the Social Development research study.

I have read and understood the information given to me about the research project and what will be required of my child/the child in my care if he/she should be selected.

I have discussed the project with my child and I am happy that they understand what is going to happen.

I understand that anything my child does during this research project will be treated as confidential. No findings that could identify my child or his/her school will be published.

I understand that participation in this project is voluntary and that I can withdraw my child or he/she can withdraw from the project up the end of the (to be decided) of 2010 without having to give a reason.

Name: _____

Date: _____

Signature: _____

Please return this form along with the student's consent form to **[name of person]**

1. This project has received ethical approval from the University of Canterbury, College of Education Ethical Clearance Committee.
2. Complaints may be addressed to: Dr Missy Morton, Chair, Ethical Clearance Committee, College of Education, University of Canterbury, Private Bag 4800, CHRISTCHURCH. Telephone: 345 8312

Appendix 15

The Social Development Project
Phase 1: Assessing Social Development

School of Educational Studies and Human Development

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Information Sheet for Students
(for teachers to say to students)

I will be selecting two students in the class and recording the instructions I give to them each morning for 3 to 5 days. I will record how quickly they do what I ask. During this time, everything will be just the same in the class - nothing will change.

A person from the University may visit some mornings to see how well I am doing. She will not interrupt the class and it is important that you just carry on as you usually do in the morning. Likewise, she may use a video and if the video is turned on, then just carry on as you normally do. If you are selected to be one of the two students, then you will be given a code name so that no-one will know your name, or the name of the school.

Your parents also have been given a letter and consent form to sign. If you have any questions about the project, you can talk to your parents or caregivers or to me. If you change your mind about being in the project, that's fine, too. All you have to do is to tell me or your parent/caregiver.

Thank you for helping me with this project.

The Social Development Project
Assessing Social Development

School of Educational Studies and Human Development

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Consent form for Students

My teacher has told me about the teacher self-recording project.

I am happy for a visitor to come to my class and record (or video) my teacher and possibly me.

I understand that I can change my mind about being observed and no-one will mind.

I know that if I have any questions I can ask my parents or caregivers or my teacher.

My name is: _____

Date : _____

Please return this form to your teacher by (date to be given).

1. This project has received ethical approval from the University of Canterbury, College of Education Ethical Clearance Committee.
2. Complaints may be addressed to: Dr Missy Morton, Chair, Ethical Clearance Committee, College of Education, University of Canterbury, Private Bag 4800, CHRISTCHURCH. Telephone: 345 8312

Appendix 16

APPENDIX 16

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Social Development Project

Social Development Scale

To be completed by the teacher. Use this Scale for 3 and 4 year old children.

(please circle where necessary)

Kindergarten:	Child Initials:	Gender: Girl Boy
DOB:	Age: yrs months	Ethnicity:
Does this child have a disability?		Yes No
If yes, name the disability		
Has the kindergarten received extra assistance for this child within the past 12 months? e.g. from GSE, Project Early, etc.		Yes No
Does the kindergarten currently receive extra assistance for this child? e.g. from GSE, Project Early, etc.		Yes No
Is this child on the GSE/Project Early/Other waiting list?		Yes No
Does this child currently receive 2 or more hours per day of teacher aide assistance?		Yes No
For how long have you had day-to-day contact with this child?		weeks
This scale completed by: *(initials only)*		Date:

For Office Use Only	Part 1	
	Part 2	
	Total	

1

Instructions for Teachers

The scale which follows consists of descriptions of 30 different social behaviours.

1 Please decide whether each of these behaviours is one which the named child engages in 'very frequently', 'often', 'about half the time', occasionally' or 'not at all' and ***place a circle*** around the appropriate number.

2 When making these decisions, please take into account **only the behaviour which you yourself have seen**. It is most important that you do not allow your judgement to be influenced by what other people have told you.

3 When making these decisions, please take into account only the behaviour which you have seen **during the past four weeks**. It is most important that you do not allow your judgement to be affected by events which have happened at some earlier time.

4 When making these decisions, please record your **immediate or first impression**. Do not spend time pondering over individual behaviours.

5 Please complete every item. An incomplete scale cannot be used.

6 Each scale takes about 10 minutes to complete. Please select a period of time when you know that you will be free from interruptions to complete the scale.

7 After completion, please return your Scale(s) to the Head Teacher.

Thank you for your assistance.

Part 1

(Please circle one number for each item)

		very frequently	often	about half the time	occasionally	never
1	Knows and complies with centre limits and boundaries.	5	4	3	2	1
2	Complies promptly with teacher instructions.	5	4	3	2	1
3	Joins adult directed activities (e.g. coming to the mat) as soon as this is signalled or requested.	5	4	3	2	1
4	Persists with (continues to work on) tasks when left unsupervised.	5	4	3	2	1
5	Uses polite remarks/requests to gain the attention of peers.	5	4	3	2	1
6	Responds appropriately when other children try to interact socially with him/her.	5	4	3	2	1
7	Shows interest in what others are saying during conversations, e.g. by nodding, smiling, commenting etc.	5	4	3	2	1
8	Shows appreciation when others offer to help, e.g. by smiling, saying 'thank you', etc.	5	4	3	2	1
9	Takes his/her turn when others are waiting.	5	4	3	2	1
10	Eats, drinks and behaves appropriately during kai time/snack time.	5	4	3	2	1
11	Compromises with others when conflicts or disagreements arise.	5	4	3	2	1
12	Offers toys to, and shares toys with others.	5	4	3	2	1
13	Approaches peer groups in a way which results in acceptance into the current group activity or conversation.	5	4	3	2	1
14	Associates with a range of typically developing peers.	5	4	3	2	1
15	Expresses anger appropriately (without becoming destructive or violent).	5	4	3	2	1

Part 2

(Please circle one number for each item)

		very frequently	often	about half the time	occasionally	never
16	Ignores initial requests and directions even though he/she has heard them.	1	2	3	4	5
17	Reacts in a cheeky or impertinent way to requests or directions from adults.	1	2	3	4	5
18	Continues talking after others have indicated that they would like to comment or that they would like to get on with something else.	1	2	3	4	5
19	Interrupts or annoys others when they are working or relaxing on their own.	1	2	3	4	5
20	Disrupts the play or the activities of the other children.	1	2	3	4	5
21	Uses demands where others would use requests.	1	2	3	4	5
22	Continues to plead, nag, or whine after his/her initial request or demand has been refused.	1	2	3	4	5
23	Tries to get own way by throwing tantrums e.g. by sulking or shouting, or swearing and refusing to co-operate.	1	2	3	4	5
24	Continues to behave inappropriately after being reprimanded, warned, or asked to stop.	1	2	3	4	5
25	Says things which indicate that he/she doesn't care about the consequences of his/her inappropriate behaviour.	1	2	3	4	5
26	Shouts others down when he/she disagrees with them.	1	2	3	4	5
27	Blames others when reprimanded for behaving inappropriately.	1	2	3	4	5
28	Acts violently towards others, e.g. shoves, hits, punches, or kicks others.	1	2	3	4	5
29	Does things which put the safety of other children at risk (e.g. throws hard objects or hits with objects).	1	2	3	4	5
30	Behaves in ways which result in other students actively avoiding having to talk, play with him/her.	1	2	3	4	5

Appendix 17

APPENDIX 17

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Social Development Project

Social Development Scale

To be completed by the classroom teacher. Use this Scale for Year 1 to Year 4 students.

(please circle where necessary)

School:	Student Initials:			Gender: Girl Boy
DOB:	Age: yrs months			Ethnicity:
Year: *(please circle)*	Year 1	Year 2	Year 3	Year 4
Does this student have a disability?				Yes No
If yes, name the disability				
Has the teacher of this student received RTLB assistance within the past 12 months?				Yes No
Does the teacher of this student currently receive RTLB assistance?				Yes No
Is this student on the RTLB waiting list?				Yes No
Is this student currently receiving 2 or more hours per day of teacher aide assistance?				Yes No
For how long have you had day-to-day contact with this student?				weeks
This scale completed by: *(initials only)*				Date:

For Office Use Only	Part 1	
	Part 2	
	Total	

Instructions for Teachers

The scale which follows consists of descriptions of 30 different social behaviours.

1 Please decide whether each of these behaviours is one which the named student engages in 'very frequently', 'often', 'about half the time', occasionally' or 'not at all' and ***place a circle*** around the appropriate number.

2 When making these decisions, please take into account **only the behaviour which you yourself have seen**. It is most important that you do not allow your judgement to be influenced by what other people have told you.

3 When making these decisions, please take into account only the behaviour which you have seen **during the past four weeks**. It is most important that you do not allow your judgement to be affected by events which have happened at some earlier time.

4 When making these decisions, please record your **immediate or first impression**. Do not spend time pondering over individual behaviours.

5 Please complete every item. An incomplete scale cannot be used.

6 Each scale takes about 10 minutes to complete. Please select a period of time when you know that you will be free from interruptions to complete the scale.

7 After completion, please return your Scale(s) to the Principal.

Thank you for your assistance.

Part 1

(Please circle one number for each item)

		very frequently	often	about half the time	occasionally	never
1	Follows established classroom rules.	5	4	3	2	1
2	Complies promptly with teacher instructions.	5	4	3	2	1
3	Gets started on required tasks as soon as this is signalled or requested.	5	4	3	2	1
4	Persists with (continues to work on) set tasks when left unsupervised.	5	4	3	2	1
5	Uses polite remarks/requests to gain the attention of peers.	5	4	3	2	1
6	Responds appropriately when other students try to interact socially with him/her.	5	4	3	2	1
7	Shows interest in what others are saying during conversations, e.g. by nodding, smiling, commenting etc.	5	4	3	2	1
8	Shows appreciation when others offer to help, e.g. by smiling, saying 'thank you', etc.	5	4	3	2	1
9	Takes his/her turn when others are waiting.	5	4	3	2	1
10	Completes required tasks to an acceptable standard (given his/her present level of ability).	5	4	3	2	1
11	Compromises with others when conflicts or disagreements arise.	5	4	3	2	1
12	Behaves sympathetically when others are unhappy, upset or embarrassed.	5	4	3	2	1
13	Approaches peer groups in a way which results in acceptance into the current group activity or conversation.	5	4	3	2	1
14	Associates with a range of typically developing peers	5	4	3	2	1
15	Expresses anger appropriately (without becoming destructive or violent).	5	4	3	2	1

Part 2

(Please circle one number for each item)

		very frequently	*often*	*about half the time*	*occasionally*	*never*
16	Ignores initial requests and directions even though he/she has heard them.	1	2	3	4	5
17	Reacts in a cheeky or impertinent way to requests or directions from those in authority.	1	2	3	4	5
18	Continues talking after others have indicated that they would like to comment or that they would like to get on with something else.	1	2	3	4	5
19	Interrupts or annoys others when they are working or relaxing on their own.	1	2	3	4	5
20	Disrupts the play or the activities of the other children.	1	2	3	4	5
21	Uses demands where others would use requests.	1	2	3	4	5
22	Continues to plead, nag, or whine after his/her initial request or demand has been refused.	1	2	3	4	5
23	Tries to get own way by throwing tantrums e.g. by sulking or shouting, or swearing and refusing to co-operate.	1	2	3	4	5
24	Continues to behave inappropriately after being reprimanded, warned, or asked to stop.	1	2	3	4	5
25	Says things which indicate that he/she doesn't care about the consequences of his/her inappropriate behaviour.	1	2	3	4	5
26	Shouts others down when he/she disagrees with them.	1	2	3	4	5
27	Blames others when reprimanded for behaving inappropriately.	1	2	3	4	5
28	Interrupts others when they are speaking.	1	2	3	4	5
29	Acts violently towards others, e.g. shoves, hits, punches, or kicks others.	1	2	3	4	5
30	Behaves in ways which result in other students actively avoiding having to talk, play, or work with him/her.	1	2	3	4	5

Appendix 18

APPENDIX 18

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Social Development Project

Social Development Scale

To be completed by the classroom teacher. Use this Scale for Year 5 to Year 8 students.

(please circle where necessary)

School:	Student Initials:			Gender: Girl Boy
DOB:	Age: yrs months			Ethnicity:
Year: *(please circle)*	Year 5	Year 6	Year 7	Year 8
Does this student have a disability?				Yes No
If yes, name the disability				
Has the teacher of this student received RTLB assistance within the past 12 months?				Yes No
Does the teacher of this student currently receive RTLB assistance?				Yes No
Is this student on the RTLB waiting list?				Yes No
Is this student currently receiving 2 or more hours per day of teacher aide assistance?				Yes No
For how long have you had day-to-day contact with this student?				weeks
This scale completed by: *(initials only)*				Date:

For Office Use Only	Part 1	
	Part 2	
	Total	

Instructions for Teachers

The scale which follows consists of descriptions of 30 different social behaviours.

1 Please decide whether each of these behaviours is one which the named student engages in 'very frequently', 'often', 'about half the time', occasionally' or 'not at all' and ***place a circle*** around the appropriate number.

2 When making these decisions, please take into account **only the behaviour which you yourself have seen**. It is most important that you do not allow your judgement to be influenced by what other people have told you.

3 When making these decisions, please take into account only the behaviour which you have seen **during the past four weeks**. It is most important that you do not allow your judgement to be affected by events which have happened at some earlier time.

4 When making these decisions, please record your **immediate or first impression**. Do not spend time pondering over individual behaviours.

5 Please complete every item. An incomplete scale cannot be used.

6 Each scale takes about 10 minutes to complete. Please select a period of time when you know that you will be free from interruptions to complete the scale.

7 After completion, please return your Scale(s) to the Principal.

Thank you for your assistance.

Part 1

(Please circle one number for each item)

		very frequently	often	about half the time	occasionally	never
1	Follows established classroom rules.	5	4	3	2	1
2	Complies promptly with teacher instructions.	5	4	3	2	1
3	Gets started on required tasks as soon as this is signalled or requested.	5	4	3	2	1
4	Uses polite requests when asking permission to do something.	5	4	3	2	1
5	Uses polite remarks/requests to gain the attention of peers.	5	4	3	2	1
6	Responds appropriately when other students try to interact socially with him/her.	5	4	3	2	1
7	Stands at an appropriate distance from people when talking to them.	5	4	3	2	1
8	Shows interest in what others are saying during conversations, e.g. by nodding, smiling, commenting etc.	5	4	3	2	1
9	Shows appreciation when others offer to help, e.g. by smiling, saying 'thank you', etc.	5	4	3	2	1
10	Takes his/her turn when others are waiting.	5	4	3	2	1
11	Completes required tasks to an acceptable standard (given his/her present level of ability).	5	4	3	2	1
12	Compromises with others when conflicts or disagreements arise.	5	4	3	2	1
13	Behaves sympathetically when others are unhappy, upset or embarrassed.	5	4	3	2	1
14	Approaches peer groups in a way which results in acceptance into the current group activity or conversation.	5	4	3	2	1
15	Expresses anger appropriately (without becoming destructive or violent).	5	4	3	2	1

Part 2

(please circle one number for each item)

		very frequently	often	about half the time	occasionally	never
16	Ignores initial requests and directions even though he/she has heard them.	1	2	3	4	5
17	Reacts in a cheeky or impertinent way to requests or directions from those in authority.	1	2	3	4	5
18	Continues talking after others have indicated that they would like to comment or that they would like to get on with something else.	1	2	3	4	5
19	Interrupts or annoys others when they are working or relaxing on their own.	1	2	3	4	5
20	Engages in the kinds of disruptive behaviour which bring classroom activities to a complete stop.	1	2	3	4	5
21	Insults others or puts others down using lewd, obscene or sexualised language.	1	2	3	4	5
22	Uses demands where others would use requests.	1	2	3	4	5
23	Continues to behave inappropriately after being reprimanded, warned, or asked to stop.	1	2	3	4	5
24	Says things which indicate that he/she doesn't care about the consequences of his/her inappropriate behaviour.	1	2	3	4	5
25	Shouts others down when he/she disagrees with them.	1	2	3	4	5
26	Blames others when reprimanded for behaving inappropriately.	1	2	3	4	5
27	Interrupts others when they are speaking.	1	2	3	4	5
28	Acts violently towards others, e.g. shoves, hits, punches, or kicks others.	1	2	3	4	5
29	Behaves in ways which result in other students actively avoiding having to talk, play, or work with him/her.	1	2	3	4	5
30	Perceives insults or criticism where none were intended.	1	2	3	4	5

Appendix 19

Gate 3: Teacher Self-Recording Form (Kindergarten)

Kindergarten: Lead Teacher taking the group: **Teacher Recorder:**

Date: **Time:** **Observer:**

				Child 1: Nominated child initials:		**Child 2: Partner child initials:**	
Task/ activity	**Inst No**	**Instruction Type (circle)**	**Teacher Instruction –write instruction**	**Comply (circle)**	**Defiance (circle)**	**Comply (circle)**	**Defiance (circle)**
	1	C D Q S O		√ X	S M H T A	√ X	S M H T A
	2	C D Q S O		√ X	S M H T A	√ X	S M H T A
	3	C D Q S O		√ X	S M H T A	√ X	S M H T A
	4	C D Q S O		√ X	S M H T A	√ X	S M H T A
	5	C D Q S O		√ X	S M H T A	√ X	S M H T A
	6	C D Q S O		√ X	S M H T A	√ X	S M H T A
	7	C D Q S O		√ X	S M H T A	√ X	S M H T A
	8	C D Q S O		√ X	S M H T A	√ X	S M H T A
	9	C D Q S O		√ X	S M H T A	√ X	S M H T A
	10	C D Q S O		√ X	S M H T A	√ X	S M H T A
Total							

Instruction Type	**Column 3 - examples**
C = Everyday centre instructions	hats/jacket away; sit on the mat; get comfortable; sit at the table; put activity out/away; stand up; sit down; come here please; eyes this way; listening please; walking quietly, tidy-up time, mat-time etc.
D = Disciplinary instruction	If you don't do this now…….Childs name repeated more than once, Quiet please (with tone); I am waiting; Do it now please; 'look', look at me; listening now.
Q = Question given	Will you please …..; Would you like to……..
S = Signal	Clapping; hands on head; using a bell; arms folded; hand up in air.
O = Other	Type of instruction not listed above

Compliance Codes **Columns 5 and 7**

√ = **Complies** within 10 seconds (count to 10)
X = **Non-compliance –**does not comply with teacher instruction within 10 seconds

Defiance Codes **Columns 6 and 8**

Defiance = Does not comply with instruction within 10 seconds and engages in antisocial behaviour

Code
S = swearing
M = muttering
H = hitting and kicking
T = throwing or damaging
A = avoidance behaviour, non-disruptive, intentional ignoring, walking away, not answering

Appendix 20

Gate 3: Teacher Self-Recording Form (Years 1-8)

School: **Teacher:** **Year:**

Date: **Time:** **Observer:**

				Student 1 – Nominated student initials:		**Student 2 – Compliant student initials:**	
Task/ activity	**Inst No**	**Instruction Type (circle)**	**Teacher Instruction –write in cue words. Fill in later.**	**Comply (circle)**	**Defiance (circle)**	**Comply (circle)**	**Defiance (circle)**
	1	C D Q S O		√ X	S M H T A	√ X	S M H T A
	2	C D Q S O		√ X	S M H T A	√ X	S M H T A
	3	C D Q S O		√ X	S M H T A	√ X	S M H T A
	4	C D Q S O		√ X	S M H T A	√ X	S M H T A
	5	C D Q S O		√ X	S M H T A	√ X	S M H T A
	6	C D Q S O		√ X	S M H T A	√ X	S M H T A
	7	C D Q S O		√ X	S M H T A	√ X	S M H T A
	8	C D Q S O		√ X	S M H T A	√ X	S M H T A
	9	C D Q S O		√ X	S M H T A	√ X	S M H T A
	10	C D Q S O		√ X	S M H T A	√ X	S M H T A
Total							

Instruction Type	**Column 3 - examples**
C = Everyday classroom instructions	Line up; hats/jacket away; sit on the mat; get comfortable; sit at your desk; notices from home; answering roll call; put activity out/away; hand up; stand up; sit down; come to my desk; homework out; take books out; pens ready; eyes this way; look this way; listening please; walking quietly.
D = Disciplinary instruction	If you don't do this now…….Childs name repeated more than once, Quiet please (with tone); I am waiting; Do it now please; 'look', look at me; listening now.
Q = Question given	Will you please …..; Would you like to……..
S = Signal	Clapping; hands on head; using a bell; arms folded; hand up in air.
O = Other	Type of instruction not listed above

Compliance Codes **Columns 5 and 7**

√ = **Complies** within 10 seconds (count to 10)

X = Non-compliance –does not comply with teacher instruction within 10 seconds

Defiance Codes **Columns 6 and 8**

Defiance = Does not comply with instruction within 10 seconds and engages in antisocial behaviour

Code

S = swearing
M = muttering
H = hitting and kicking
T = throwing or damaging
A = avoidance behaviour, non-disruptive, intentional ignoring, intentional off task